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Access to early childhood education in Australia

Jennifer Baxter and Kelly Hand

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This paper uses unit record data from a number of sources. These are:

- *Growing Up in Australia:* The Longitudinal Study of Australian Children—The study is conducted in a partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS).
- The National Survey of Parents' Child Care Choices (2009)—This survey was commissioned by DEEWR, and conducted by the Social Research Centre.
- Australian Early Development Index (AEDI; 2009)—The AEDI is a population measure of children's development as they enter school. The collection is conducted by DEEWR, in partnership with state and territory governments, the Centre for Community Child Health (at The Royal Children's Hospital, Melbourne and a key research centre of the Murdoch Childrens Research Institute) and the Telethon Institute for Child Health Research, Perth.
- The Childhood Education and Care Survey (2008)—This is an ABS survey, conducted in June 2008 as a supplement to the ABS monthly Labour Force Survey.

The findings and the interpretation of them as reported in this paper are those of the authors and should not be attributed to DEEWR, FaHCSIA, AIFS or the ABS.

Abbreviations

Abbreviation	Name
AECE	Access to Early Childhood Education project
AEDI	Australian Early Development Index
AIFS	Australian Institute of Family Studies
CEaCS	Childhood Education and Care Survey
COAG	Council of Australian Governments
DEEWR	Department of Education, Employment and Workplace Relations
ECDSG	Early Childhood Data Sub Group
ECE	Early childhood education
ECEC	Early childhood education and care
FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
LDC	Long day care
LSAC	*Growing Up in Australia*: The Longitudinal Study of Australian Children
LSIC	Footprints in Time: The Longitudinal Study of Indigenous Children
MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth Affairs
NESB	Non–English speaking background
NIA ECEC	National Information Agreement on Early Childhood Education and Care
NP	National Partnership
NP ECE	National Partnership Agreement on Early Childhood Education
NSPCCC	National Survey of Parents' Child Care Choices
OECD	Organisation for Economic Co-operation and Development
SEIFA	Socio-Economic Index for Areas
SLA	Statistical Local Area

Executive summary

The Access to Early Childhood Education project

On 29 November 2008, the Council of Australian Governments (COAG) endorsed the National Partnership Agreement on Early Childhood Education (NP ECE). This agreement committed the Commonwealth and all state and territory governments to achieving universal access to preschool by 2013. As part of this National Partnership, it was acknowledged that high-quality information is an essential component of the COAG Early Childhood Reform Agenda to ensure an evidence base for policy and program development.

The Access to Early Childhood Education (AECE) project was undertaken by the Australian Institute of Family Studies (AIFS) on behalf of the Department of Education, Employment and Workplace Relations (DEEWR) to explore access to early childhood education (ECE) in the context of the NP ECE. There were three key components to the project:

- a conceptual analysis of what "access" means, according to Australian and international literature and key stakeholders;
- consideration of issues around measuring access and how it may be better measured in the future; and
- examination of the factors that affect access to early childhood education for Australian families, especially in relation to vulnerable or at-risk groups of children.

The undertaking of these project objectives broadly entailed the following methods:

- a review of the Australian and international literatures;
- consultation with key government and non-government stakeholders across Australia; and
- analyses of national datasets from the National Survey of Parents' Child Care Choices (NSPCCC), 2009; the Longitudinal Study of Australian Children (LSAC), 2008; the Australian Early Development Index (AEDI), 2009; and the Childhood Education and Care Survey (CEaCS), 2008.

This research has focused on exploring early childhood education for children, specifically those in the year prior to full-time schooling.

The literature reviews and consultations were important in addressing each of the three key components of the projects. The analysis of survey data provided insights into issues concerning measurement of access, but was particularly valuable for the third of the components, on factors that affect access to ECE. Results from each of the methodologies are woven together in the sections that follow, summarising the key findings for each component of the study. However, before interpreting the results it is prudent to first consider the context of ECE in Australia.

Early childhood education in Australia

Reflecting the federal system of government in Australia, the delivery of early childhood education services is undertaken by the state and territory governments. Furthermore, many local governments are also involved in the provision of such services, and the result of this division of powers and responsibilities is a great deal of variation in the way in which ECE is provided. The complexity and diversity is apparent if we consider that ECE services are

provided through kindergartens, stand-alone preschools, long day care (LDC) settings and early learning centres, as well as preschool programs within the independent school sector.

ECE programs in Australia tend to be delivered along two broad models of ECE—one a predominantly government model and the other a predominantly non-government model. In the former, it is more typical for ECE to be accessed through standalone preschools or preschools attached to schools. Preschool is often free (with a voluntary levy) under this model. In the latter, there is more diversity in the arrangements, with LDC also playing a significant role, and costs tending to be higher. The eastern states of NSW, Victoria and Queensland generally are more closely aligned with the non-government model, with the other states/territories looking more like the government model.

Taking account of the variation of settings within which ECE is offered across Australia was an important factor in understanding the findings of the AECE project. In particular, the complexity of ECE in Australia has implications for the measurement of access. The extent to which different settings might affect access to ECE is an important issue, and this is discussed below, when considering the question of whether (and why) some children are missing out on ECE.

The meaning of "access" to early childhood education

One of the components of the AECE project was in relation to establishing the meaning of "access" to early childhood education. Views of key stakeholders were sought regarding what they perceived "access" to early childhood education to be. The literature regarding the meaning of "access" was reviewed, particularly in the context of early childhood education. Together, this information confirmed that there is widespread agreement that "access" to ECE is a multidimensional concept, encompassing more than just the number or proportion of children enrolled in ECE.

The stakeholder discussions identified the following components of "access":

- creating opportunities for children to participate in ECE programs;
- providing enough time within the programs for children to learn; and
- allowing children to experience the program (and its potential benefits) fully.

In other words, being able to provide a place for children to enrol in ECE is the first step toward access. Whether availability of places translates into enrolment in places is likely to depend on the characteristics of the services that offer those places and on the preferences of parents of children who are eligible to attend these services. The Australian and international literature identified factors such as cost, quality, opening hours, physical location and the responsiveness of services to meeting diverse child and family needs as being important to families.

The aspect of time, when raised by stakeholders as one part of the "access" concept, may to some extent reflect that under the NP ECE, access to ECE involves providing programs to children for 15 hours per week.

Beyond the idea of children simply being present at a service for enough time in the year prior to full-time schooling, there was also acknowledgement in both the stakeholder discussions and the literature that access needs to be considered in terms of the experience of attending the program being of benefit to children. That is, the program needs to be of high quality, accessible and delivered in such a way that the child is able to fully experience the potential benefits of ECE.

In summary, this component of the project found that "access" to ECE is multidimensional, both conceptually and in practice, which supports the broader goals of the NP ECE. This, of course, provides challenges when attempts to measure a more completely defined concept are attempted, as discussed in the next subsection.

Measuring "access" to early childhood education

The second component of this project related to the measurement of access to early childhood education. Broadly, there were two sets of issues:

- measurement issues related to the simplest aspect of access—that of participation or enrolment in ECE; and
- whether or not, and how, to incorporate the multidimensional nature of "access" into the measurement.

Access measured by participation or enrolment

Several difficulties in measuring access to ECE in terms of participation were identified in this report, and were evident in the analyses of survey data. Difficulties were clearly documented in the existing literature and were also described by the various government and non-government stakeholders in our consultations. In fact, we found that measurement issues are keenly felt at the operational level, with some stakeholders feeling that they lack full information about the extent to which children—and children with particular characteristics—might be missing out on ECE in their region.

The key issues affecting measurement of participation or enrolment in ECE for children in the year prior to full-time schooling that were identified in the AECE project include the following:

- The diversity of ECE systems across Australia and the different nomenclature used for preschool and the first year of school across the states caused some initial difficulties, especially in the surveys, in the collection of accurate data on children's participation in ECE. For example, some parents may not have been aware of whether their child received a preschool program in LDC, while some parents may have found it difficult to say whether their child attended a preschool as opposed to a child care centre. If ECE was delivered in a school setting, this could likewise have been misreported as the children being in school rather than ECE.
- Related to this, the variation in school starting age caused difficulties in identifying the population eligible for ECE. This is due to differences across jurisdictions in the age at which children commence full-time school, and from children being able to commence school one year after they are eligible to start.
- The diversity of service providers also adds complexity and challenges to the collection and analyses of administrative data. The availability of multiple service providers for ECE can pose challenges for those relying on administrative data, as children may be double-counted if they attend more than one program.
- Survey data (such as those from the national collections used in this report) are usually not useful for analyses of local area or regional patterns of ECE participation, given sample sizes do not allow disaggregation to small areas. Administrators and service providers require information about ECE participation as it applies to their region or local area.
- Information on ECE enrolment allows examination of the characteristics of those who enrol, but obviously not the details of children who have not enrolled. This, then, limits the potential to study factors related to children missing out on ECE in that area or jurisdiction. Australian Census data can be helpful in identifying potentially eligible populations, but these data become out-of-date between Census years (with gaps of up to five years).

Despite the measurement difficulties and limitations, in this report we have shown that survey data can provide some insights into ECE in Australia, at least at the broader state/territory and national levels. Participation rates have the advantage of being easily understood and easily compared over jurisdictions and time. Compared to more sophisticated measures, such figures are also relatively easy to derive from existing datasets.

There are, however, still challenges that mean even these estimates are not as exact as might be needed. This was evident in this report in the divergence of some of findings across different datasets—particularly so when examining participation rates within particular states and territories of Australia. For this reason, we did not remark on these differences in this report.

These divergent findings highlight that it is important to be mindful of the limitations of the data that are currently available when using these data for decision-making.

A multidimensional measure of access to early childhood education?

Clearly, focusing only on participation misses out on the multidimensionality of the concept of "access", as this disregards dimensions such as the hours and quality of children's experiences of an ECE program. Conceptually, it would be relatively simple to extend the notion of participation, as used in this report, to incorporate the dimension of time—to classify children, for example, as receiving no ECE, some ECE but fewer than 15 hours a week, and receiving ECE for 15 hours per week or more. In practice, there are likely to be challenges, especially for children who receive ECE across more than one program, and those who may vary their hours of ECE from week to week.

Adding in a dimension of quality of the ECE experience for children is immensely more challenging. It may be possible to identify to what extent children are receiving their ECE from appropriately trained educators; however, in surveys, parents may be unaware of these details. Again, it would be difficult to capture the instances of children receiving ECE from multiple providers. Of course, the qualification of the educator is just one indicator of the likely quality of the ECE experience. It is, however, not clear how other indicators could be captured to reflect individual children's experience within a program; for example, compared to other children, those with special needs and from culturally diverse or disadvantaged backgrounds may gain different experiences and benefits from an otherwise high-quality program.

These analyses have led us to the view that it is useful to measure access, in the first instance, in terms of participation or enrolment, which allows examination of how access varies across time, across jurisdictions and across different socio-economic groups. This, however, needs to be done carefully, being mindful of the data issues and limitations that are a consequence of the way in which ECE is delivered in Australia.

Until access can be measured well in this simple way, it will be difficult to draw in the other dimensions that have been highlighted in this report. However, consideration of the multidimensionality of access can still be acknowledged. The information about participation or enrolment could be supplemented with other more detailed, and perhaps qualitative information, to inform on these different aspects of access and provide more depth to the overall quantitative data.

Which children are missing out, and why?

In this component of the AECE project, we drew upon the views of stakeholders, the literature, and new analyses of three main datasets (AEDI, NSPCCC and LSAC), to explore which characteristics of children, families or regions might predict lower levels of access to ECE. These data analyses focused on access in terms of participation in ECE, for children in the year before full-time school. Children were considered to be in ECE if they were in either preschool or long day care. *Any* participation in LDC was counted as ECE, regardless of whether parents reported that their children had a preschool program as part of LDC. It was felt that any LDC for children of this age was likely to involve a structured program, and would be expected to have some component of early learning built in. Also, the decision to include any LDC as ECE was partly due to data quality concerns about the distinction between LDC with and without preschool programs.

Some analyses of the types of ECE used was also included, with a view to understanding whether there were particular gaps in the use of some types of services by those children who were potentially at risk of missing out on ECE.

As noted above, in the analyses of participation in ECE, we found that each dataset portrayed a different story with regard to participation rates across states and territories, and so we have not focused on those differences. However, the variation in *types* of ECE clearly reflected the state/territory differences in ECE delivery, showing up the greater reliance on LDC in the eastern

states than in other states. In all states/territories, though, there was a significant proportion of children in both preschool and LDC.

In the data analyses, a range of characteristics was examined to cover local area variation (remoteness and socio-economic disadvantage of regions), socio-economic characteristics of families (parental income, employment, single- versus couple-parent families, parental education); and other characteristics, including Indigenous background of families, non–English speaking background (NESB) of families, and children with special health needs. These characteristics were included in the analyses as they reflected some of the key factors referred to in the literature and the consultations as being potentially able to identify children who were missing out on ECE.

Which children are missing out on ECE?

The analyses confirmed the expectations of the stakeholders and also the findings reported in the literature that children missing out on ECE are more often represented among disadvantaged families, and among children who are perhaps in greatest need of ECE in respect of preparing children for school. The groups of children who stood out in these analyses as being less likely to be participating in ECE were Indigenous children and children from NESB families. Children from socio-economically disadvantaged families were also less likely to participate in ECE than those from socio-economically advantaged families. Children living in remote areas had the lowest levels of participation in ECE compared to those living in major city areas. There was also some variation according to the disadvantage of regions, but it was not clear that this reflected the characteristics of the regions or the families living within those regions.

We did find that there tended to be more variation in participation in ECE by these characteristics in the eastern states—the states in which ECE is more often provided through LDC. That is, there were greater differences in participation between the least and most vulnerable children in the eastern states than in the other states.

The factors driving the differences in ECE participation are not all easy to identify, given the overlapping nature of many of the characteristics we have examined. For example, compared to non-Indigenous children, Indigenous children are more likely to be living in socio-economically disadvantaged families and in remote regions, so their lower participation rates may be affected by all or any of these factors. Also, the analysis is complicated by the distinction between preschool and child care. In particular, parental employment is likely to be strongly linked with a need for child care. Decisions about child care versus preschool for some families, are expected to be associated with parental employment factors, as well as the availability of different care and ECE options.

Why do some children miss out on ECE?

This question proved particularly difficult to answer within the scope of this research project, and we could not provide any definite answers. As discussed below, understanding reasons for non-participation would be best explored with a different research methodology.

With one of the differences in the models of delivery of ECE being the cost of services, an important question is to what extent cost (or perceived cost) of services affects access to ECE for more vulnerable or disadvantaged families. Issues of costs or availability to ECE were sometimes referred to by parents when they were asked why their children were not in ECE. However, parents were most likely to say their children were not in ECE because of reasons related to the availability of a parent to care for children, or related to a belief in parental care of children. This suggests some degree of choice being exercised by these parents, but it warrants further attention, preferably with a different research methodology that would allow the decision-making process to be explored more fully. This would be particularly useful in regard to more disadvantaged and vulnerable families.

The analyses of parental decision-making and types of ECE provide some insights into the various factors parents take into account when choosing ECE for their child. While some clear patterns emerge from some of these data, they need to be interpreted cautiously. For example, these analyses show that for children attending LDC only, the most common response parents

provided as the reason for choosing this arrangement was to accommodate work and study commitments. Where children were attending a preschool-only program, however, the most common reasons provided focused on social and intellectual development. However, this does not mean that parents choosing only LDC don't value their child's development—it may be that they are also taking these factors into account when choosing ECE for their child.

Most of the findings presented here were consistent with expectations, although some suggest that further research may be useful in helping disentangle how different factors affect family decision-making regarding child participation in ECE. In particular, more research on factors related to family income, employment and parental education levels, and how they intersect with decisions about ECE would help in understanding the issues for more vulnerable families. If such research also took into account the availability of different types of ECE in the local area, it would be useful for examining how the supply of different services affects the decision-making of parents.

Conclusion

Returning to the broader focus of this project, we have presented the view that access to ECE should be considered as being multidimensional. This is important because participation or enrolment should not be seen as the end point, and the intended goals of ECE need to be built into the concept of access.

However, in terms of measurement, this research suggests that it is important to address, as far as is possible, issues regarding the simplest measures of access—those of participation or enrolment—before attempting to incorporate other dimensions of access into the measures used. A simple measure of participation or enrolment is a useful starting point for monitoring trends and comparisons across groups. Even with some measurement difficulties, this report has highlighted the value of such measures in identifying some characteristics that are related to lower rates of access to ECE. To supplement this, more qualitative information, captured through one-off or occasional studies at regional (or national) levels, could be extremely valuable for providing greater insights into the other aspects of access. No doubt, service providers and other stakeholders also have available to them other ways of capturing some of the other dimensions of access that can be useful at the program level. Use of measures of participation or enrolment, along with this supplementary information, allows the multifaceted nature of access to be recognised without attempting the collection of new information, which is likely to come with its own set of very challenging measurement issues.

Another important part of this paper was using the information that we have to examine to what extent, and why, certain children are missing out on ECE. These analyses have identified that there are some risk factors and, consistent with prior research, we have found that more vulnerable and disadvantaged families are more likely to miss out on ECE. The picture is complicated, though, in part because of the interplay between preschool and long day care, and how parental choice of such services for children will also depend on parents' employment arrangements.

The most difficult aspect of this research, then, is "why" some children miss out on ECE. Existing data do not really delve into this question sufficiently to be able to understand to what extent non-participation is related more to choice or to constraints of parents. In the preceding section we already discussed some of the limitations of what we know about parents' decision-making in this regard. Gaining greater insights into the reasons for children's non-participation in ECE, as well as the experiences of children who do go, would be of considerable value. Such insights may need to be sought in a less structured format than is imposed through the questionnaires used in these analyses. More detailed discussions with parents may help to identify what the real barriers are for those not attending ECE and what factors are important within an ECE setting for their children to be able to fully experience the program.

1 Introduction

On 29 November 2008, the Council of Australian Governments (COAG) endorsed the National Partnership Agreement on Early Childhood Education (NP ECE). This agreement committed the Commonwealth and all state and territory governments to achieving universal access to preschool by 2013. As part of this agreement, the following core objectives were outlined in clauses 17–19 of the NP ECE (COAG, 2008):

> 17 The universal access commitment is that by 2013 every child will have access to a preschool program in the 12 months prior to full-time schooling. The preschool program is to be delivered by a four year university qualified early childhood teacher, in accordance with a national early years learning framework, for 15 hours a week, 40 weeks a year. It will be accessible across a diversity of settings, in a form that meets the needs of parents and in a manner that ensures cost does not present a barrier to access. Reasonable transitional arrangements—including potentially beyond 2013—are needed to implement the commitment to preschool program delivery by four year university qualified early childhood teachers, as agreed in the bilateral agreements.
>
> 18 Especially for the first two years of implementing universal access (2009 and 2010), national priorities include: increasing participation rates, particularly for Indigenous and disadvantaged children; increasing program hours; ensuring cost is not a barrier to access; strengthening program quality and consistency; and fostering service integration and coordination across stand-alone preschool and child care. The strategies for addressing these priorities may differ on a state-by-state basis.
>
> 19 Children living in remote Indigenous communities have been identified as a specific focus for universal access, with the Prime Minister announcing as part of his Sorry Day address that by 2013 every Indigenous four year old in a remote community be enrolled and attending a preschool program. This reflects the significant under-representation of Indigenous children in preschool programs. (pp. 5–6)

As part of this National Partnership, it has been acknowledged that high-quality information is an essential component of the COAG Early Childhood Reform Agenda to ensure an evidence base for policy and program development. To inform this evidence base, there is a need to undertake research on how to define and measure "access" in order to better inform and assess the progress of the NP ECE.

1.1 The benefits of early childhood education for children

The key principles driving the NP ECE involve the benefits of providing universal access to early childhood education, as set out in clauses 6–8 of the agreement (COAG, 2008):

> 6 Early childhood is a critical time in human development. There is now comprehensive research that shows that experiences children have in the early years of life set neurological and biological pathways that can have life-long impacts on health, learning and behaviour. There is also compelling international evidence about the

returns on investment in early childhood services for children from disadvantaged backgrounds, including the work of Nobel Laureate James Heckman.

7 On average, children in Australia have good outcomes overall. The outcomes for some children however are poor and the gap is widening. Early childhood services, policies and practices in Australia have not benefited from a national focus and are therefore quite fragmented. This can be problematic for some families and particularly for those families with multiple and complex vulnerabilities, who may find it difficult to access and navigate fragmented services. It also makes it difficult to advance prevention-orientated and early intervention approaches for all children and to coordinate services for those with complex problems.

8 High quality early childhood services offer the productivity benefits of giving children the best possible start in life, and for parents, the opportunity to be active participants in the workforce or community life. (pp. 3–4)

These principles are based on an extensive international literature about the benefits of early childhood education for children prior to full-time schooling, and a detailed review of this literature was recently published as part of the 2010 annual progress report for the evaluation of the National Partnership (Urbis Social Policy, 2011).

High-quality early childhood education experiences are seen to have the potential to benefit all children in terms of their cognitive and social development, with higher quality programs having a higher positive effect on these dimensions (Urbis Social Policy, 2011; Wise, Da Silva, Webster, & Sanson, 2005). Participation in early childhood education programs has also been found to "improve school readiness, expressive and receptive language and positive behaviour for all children" (Urbis Social Policy, 2011, p. 30). For children from "disadvantaged" families, the link between quality programs and outcomes is even more pronounced, with "high quality education and care [offering] a direct strategy for maximising developmental outcomes, especially for young children from vulnerable families" (Urbis Social Policy, 2011, p. 29).

Similar syntheses of the research findings about the potential benefits of ECE have also been found in other reviews (Elliott, 2006; Press & Hayes, 2001).

1.2 Measuring access to early childhood education in Australia

Defining and measuring access to early childhood education is central to developing early childhood policies. As part of ongoing bilateral arrangements under the NP ECE, states and territories provide jurisdictional annual reports to the Commonwealth Government that inform on their progress towards achieving universal access against six NP ECE performance indicators. These include the proportion of children enrolled in (and attending, where possible to measure) a preschool program; the number of teachers delivering preschool programs who are four-year university-trained and qualified in early childhood education; hours per week of children's attendance; weekly cost per child (after subsidies); and the proportion of disadvantaged children, including Indigenous children, enrolled in (and attending) a preschool program (where possible to measure). While the Commonwealth and states and territories continue to work together to bring these reports into alignment, the diversity found across the different states and territories around the ways in which preschool programs are delivered, and the ages at which children participate in these programs, provide ongoing challenges. This is particularly the case when considering national datasets that seek to measure participation and outcomes, particularly for different groups within this cohort.

The data available suggest that a proportion of young children are not participating in preschool programs and therefore missing out on its potential benefits. Developing a better understanding of this group—that is, who is not participating in preschool programs and why—will help inform future early childhood policy and link with achieving universal access for all children. As noted above, this is seen to be particularly important for children from disadvantaged and vulnerable backgrounds, where there is strong evidence that the delivery of a high-quality early

childhood education program in the year before full-time schooling is vital in providing a solid foundation for future learning and development.

1.3 The Access to Early Childhood Education Project

The Access to Early Childhood Education (AECE) Project has been undertaken by the Australian Institute of Family Studies on behalf of the Department of Education, Employment and Workplace Relations (DEEWR)[1] to explore the question of what "access" to ECE means and how it could be measured. The research involved a number of methodologies, including a review of Australian and international literature; consultations across Australia with key stakeholders from both government departments involved in the implementation of the NP ECE and non-government agencies concerned with the education and wellbeing of young children; and analyses of key Australian datasets that provide information about the participation of children in ECE in the year prior to full-time schooling.

There are three key components to the project:

- a conceptual analysis of what "access" means, according to Australian and international literature and key stakeholders;
- consideration of issues around measuring access and how it may be better measured in the future; and
- analyses of several key datasets to examine the factors that affect access to early childhood education for Australian families, especially in relation to vulnerable or at-risk groups of children.

To explore these factors, the report examines a range of child, family and regional characteristics to identify those groups of children most likely to be missing out on ECE. Analyses of parental decision-making concerning ECE are also included, to help inform on why particular groups of children may not be receiving ECE.

The report commences in Section 2 with a brief overview of how ECE is delivered in Australia, followed in Section 3 by a detailed description of the methodologies employed in the AECE Project. Section 4 then considers the meaning of the term "access", and discusses the various characteristics expected to be associated with variations in levels of access to ECE, as well as issues related to the measurement of such access. Section 5 presents the first set of data analyses, focusing on how overall access to ECE varies for children with different characteristics. Section 6 presents the second set of data analyses, with a view to explaining the variation in the types of ECE in which children participate. Finally, Section 7 presents a conclusion to the report.

[1] The research project was commissioned by DEEWR on behalf of the Early Childhood Data Sub Group (ECDSG), which works to implement the National Information Agreement on Early Childhood Education and Care (NIA ECEC). The NIA ECEC outlines an agreed work program, which includes the administration of projects funded from the overall allocation of $3 million retained annually for national early childhood research, evaluation and data development activities.

2 The provision of early childhood education in Australia

Since the 2008 COAG commitment that by 2013 "all children in the year before full-time schooling will have access to high quality early childhood education programs delivered by degree-qualified early childhood teachers, for 15 hours per week, 40 weeks of the year, in public, private and community-based preschools and child care" (Dowling & O'Malley, 2009), the delivery of early childhood education in Australia has undergone significant change.

In this report, we focus on the provision of ECE to children in the year prior to full-time schooling. This mainly involves children aged 4 years old; however, as discussed below, this is affected to some extent by the variation in school starting ages across the different states and territories (see also Edwards, Taylor, & Fiorini, 2011).

2.1 Models of early childhood education delivery

Reflecting the federal system of government in Australia, the delivery of early childhood education services is undertaken by the state and territory governments. Furthermore, many local governments are also involved in the provision of such services, and the result of this division of powers and responsibilities is a great deal of variation in the way in which ECE is provided (Press & Hayes, 2001).

The current system of delivery of early childhood education within and across the different states and territories is complex and multifaceted, with services being provided in a mix of contexts, including kindergartens, stand-alone preschools, long day care (LDC) settings, early learning centres, and preschool programs within the independent school sector. These services are also delivered through a variety of different "providers" that involve "complex layers and connections between government, voluntary and church groups, public education systems, independent, Catholic and other religious schools, community organisations, free-market forces, small business owner-operators and major commercial childcare companies, plus of course families and children" (Elliott, 2006, p. 1).

While a mix of service provision exists within all of the states and territories, two major, distinct models can be derived (Dowling & O'Malley, 2009). The first is one where ECE is primarily funded and delivered by government, and the second is where the government subsidises ECE but the service is primarily delivered by non-government agencies. These two models broadly have the characteristics summarised in Table 1 (on page 6).

In the Australian context, while no state or territory system fits wholly within one or other of these models, it has been argued that the provision of ECE in South Australia, Western Australia, Tasmania, the Northern Territory and the Australian Capital Territory sits more within the first model (government-funded and delivered) and New South Wales, Victoria and Queensland have a model of service delivery that is more like the second model (where government subsidises services that are delivered by other agencies) (Dowling & O'Malley, 2009; Urbis Social Policy, 2011). However, as Dowling and O'Malley (2009) pointed out, all jurisdictions involve a "mix of the two and the reality is more complex than the models suggest" (p. 4). For example, private providers operate within states that are primarily model 1 and some government-run preschools operate in model 2 states, such as New South Wales.

Table 1 Models of early childhood education delivery in Australia, 2009

Model 1: Government model	Model 2: Non-government model
■ The state/territory government owns, funds and delivers the majority of preschool services. ■ Preschools are treated in much the same way as primary and secondary schools. ■ The jurisdiction may provide supplementary funding to preschools, but generally not to preschools in long day care centres, because they attract Commonwealth funding through the Child Care Benefit and Child Care Rebate. ■ The jurisdiction owns 70–90% of preschools.	■ The state government subsidises preschool services that are provided by non-government organisations. ■ Preschools in long day care centres charge some fees and attract Commonwealth funding through the Child Care Benefit and Child Care Tax Rebate. ■ The government owns fewer than 20% of preschools, and these are generally targeted at disadvantaged communities, in contrast to government schools, which are comprehensive.

Source: Urbis Social Policy (2011), p. 91

There is also significant diversity in what ECE services in the year prior to children commencing full-time schooling are called across the different states and territories. For example, "kindergarten" is used in Queensland, Western Australia and Tasmania; "preschool" in New South Wales, the Northern Territory and the Australian Capital Territory; and both "kindergarten" and "preschool" in Victoria and South Australia.

The age at which children participate in ECE in the year prior to commencing full-time school also varies between the jurisdictions, reflecting the different school starting ages between the states and territories. Table 2 (on page 7) provides a summary of the different characteristics of ECE across the jurisdictions, and also provides some additional details about the different ways in which it is delivered.

2.2 Participation in early childhood education

Enrolment rates for children in ECE in the year prior to full-time schooling are provided by the states and territories in the NP ECE annual reports for 2010.[2] Table 3 (on page 7) shows the enrolment rates and proportions of children enrolled in ECE programs for each state, as well as the proportions of children enrolled in a program where at least 15 hours per week is available. Given the diversity of the systems of ECE operating in the different jurisdictions, and the different starting points for each of the states and territories at the beginning of the NP ECE, the enrolment rates are still somewhat varied across states. However, all jurisdictions reported positive progress in regard to meeting the targets of the National Partnership.

Reflecting the diversity of service provision within all of the states and territories, issues around accurately measuring and tracking progress against the performance indicators were indicated to some extent in almost all of the 2010 annual reports. Key issues shared across some of the jurisdictions included:

- concerns about the quality of the baseline measures;
- the variable quality of population estimates used for calculating proportions of children participating in ECE (particularly when small age and geographic cohorts were involved); and
- difficulties in accessing comparable data across different service contexts in terms of both the measures used and the timing of measures.

[2] Annual reports about the progress of the NP ECE are provided by each of the state and territory governments. The individual reports are available from the DEEWR website at <www.deewr.gov.au/Earlychildhood/Policy_Agenda/ECUA/Pages/annualreports.aspx>.

Table 2		Characteristics of models of early childhood education, by jurisdiction, 2009		
Jurisdiction		**Year before full-time schooling**	**First year of full-time schooling**	**Characteristics of model**
NSW	Name	Preschool	Kindergarten	*Non-government model*. Mixed system, with most programs provided by LDC services and community preschools, and regulated by the NSW Department of Community Services. Also 100 preschools are attached to primary schools and administered by the Department of Education and Training.
	Age	4 years by 31 July	5 years by 31 July	
Vic.	Name	Kindergarten	Preparatory	*Non-government model*. Mixed system, with programs provided by LDC services, community facilities, children's hubs and schools. Most services are run by local governments and businesses. ECE is funded by the Department of Education and Early Childhood Development. Requires teachers with ECE qualifications in addition to tertiary degrees.
	Age	4 years by 30 April	5 years by 30 April	
Qld	Name	Kindergarten	Preparatory	*Non-government model*. ECE is primarily provided by community providers and regulated and funded by the Department of Education, Training and the Arts.
	Age	4 years by 30 June	5 years by 30 June	
SA	Name	Kindergarten	Reception	*Government model*. A number of preschools are staffed and funded by the education department and integrated with or linked to schools. Requires teachers with ECE qualifications in addition to tertiary degrees. Government-provided preschool education is free, with a voluntary levy.
	Age	4th birthday	5th birthday	
WA	Name	Kindergarten	Pre-primary	*Government model*. A number of preschools are staffed and funded by the education department and integrated with or linked to schools. Requires teachers with ECE qualifications in addition to tertiary degrees. Government-provided preschool education is free, with a voluntary levy.
	Age	4 years by 30 June	5 years by 30 June	
Tas.	Name	Kindergarten	Preparatory	*Government model*. A number of preschools are staffed and funded by the education department and integrated with or linked to schools. Government-provided preschool education is free, with a voluntary levy.
	Age	4 years by 1 January	5 years by 1 January	
NT	Name	Preschool	Transition	*Government model*. A number of preschools are staffed and funded by the education department and integrated with or linked to schools. Government-provided preschool education is free, with a voluntary levy.
	Age	4th birthday	5 years by 30 June	
ACT	Name	Preschool	Kindergarten	*Government model*. A number of preschools are staffed and funded by the education department and integrated with or linked to schools. Requires teachers with ECE qualifications in addition to tertiary degrees. Government-provided preschool education is free, with a voluntary levy.
	Age	4 years by 30 April	5 years by 30 April	

Source: Urbis Social Policy (2011), in particular, pp. 90–91

Table 3	Enrolment rates in early childhood education in the year before full-time schooling, state and territory reports, 2010	
Jurisdiction	**Enrolment rates in all ECE programs (%)**	**Enrolment rates in ECE programs where at least 15 hours per week available (%)**
NSW	86.2	41
Vic.	99.9	18.4
Qld	40	55
SA	87.7	28.8
WA	97.5	26.2
Tas.	97	33.4
NT	88.4	36
ACT	95.4	27.2

Note: Figures have been presented here with and without decimal places—as they were presented in the original documents. Note that state/territory estimates are not derived using a consistent methodology.

Source: NP ECE annual reports (2010). The figures in this table are drawn from the annual reports for the 2010 calendar year provided by each of the states and territories about their progress with NP ECE targets. See footnote 2.

3 Methodology and data

In order to address the objectives outlined in Section 1, this project used a range of methodologies:

- consultating with key stakeholders, including state and territory government departments responsible for implementing the COAG agreement, as well as other stakeholders with interests in the wellbeing of young children;
- undertaking a comprehensive review of international and Australian literature; and
- analysing a range of Australian datasets.

Results from each approach have been integrated throughout the report. A description of the first two of these methodologies is provided below, with more detail about the data analyses provided in Appendix B.

3.1 Consultations with stakeholders

A key component of the project was consulting with state and territory government departments that have responsibility for early childhood education. These consultations were particularly important in addressing questions around how access to early childhood education was conceptualised within each of the different states and territories, issues around measuring access, and the factors affecting participation in ECE and the various groups that may not be accessing ECE within the different jurisdictions.

Consultations with government stakeholders mainly took place with departmental officers involved in the implementation of the NP ECE. Participation from each of the jurisdictions was sought via the ECDSG, with members from each of the states and territories agreeing to be the initial contact points for arranging discussions.

Discussions took place with departmental officers from each of the states and territories from July through to September 2011. Most discussions involved groups of between two and eight participants and generally took between one and two hours. With the participants' consent, the discussions were audio-recorded and then transcribed to ensure that the content of the discussions was accurately documented and to allow a detailed review of the discussions to be undertaken.

Discussions usually commenced with some background information about how early childhood education was being delivered within the jurisdiction and any significant changes that had taken place in its delivery since the signing of the COAG agreement. The discussion then focused on the three broad areas of the Access to Early Childhood Education Project. These involved asking participants about the following areas:

- Defining and conceptualising access to early childhood education services:
  - How is "access" defined or conceptualised in the jurisdiction?
- Factors affecting access to early childhood education services:
  - Within the jurisdiction, what different delivery systems exist (i.e., school-based, community-based, long-day-care-based, integrated and specialised/targeted services)? To what extent do these different systems affect participation?
  - What are the factors that participants have observed that influence a family's decision about whether or not to access early childhood education services for their children?

  - Are there different access issues for different cohorts of the population in the jurisdiction (e.g., low socio-economic status; Indigenous, remote or other disadvantaged groups) and if so, how may these be addressed?
- Measuring access to early childhood education services:
  - How do departments in the jurisdiction measure access to early childhood education services?
  - What issues has the jurisdiction encountered in measuring access?

AIFS also consulted with a range of other stakeholders in order to gain a broader range of perspectives on what constitutes access, what critical issues affect access. and the difficulties that early childhood education services face in providing accurate and consistent data to allow state and territory departments to measure access. These stakeholders included children's commissions, and organisations representing service providers, early childhood teachers and other agencies with interests in the wellbeing of young children. These stakeholders were approached in a variety of ways. In some cases, the different jurisdictions organised for these stakeholders to take part; either in the same discussion as the departmental stakeholders or in a separate meeting. Other jurisdictions provided a list of stakeholders, which were then contacted by the research team. Two of the stakeholders provided written submissions rather than participating in a discussion. In total, 40 different other stakeholders took part in the consultations.

The discussions focused on the same broad themes as those with the government stakeholders and the same questions were used as the starting point. While some of the stakeholders were happy to be identified and have their comments attributed to them, most were not.

With the agreement of those who contributed to the project, the information provided from these discussions has been reported confidentially. Any information that may have identified an individual has been removed throughout the report.

3.2 Literature review

To inform and supplement the consultations and data analyses, AIFS undertook a systematic literature review on the topic of early childhood education.

The focus of the search was the factors parents take into account when deciding whether or not their children will participate in early childhood education, as well as the structural factors that may support or inhibit the participation of children in these services. In addition, the search considered particular groups that may be less likely to participate in early childhood education, such as children with disabilities, or those from low-income, culturally and linguistically diverse or Aboriginal and Torres Strait Islander background to explore potential barriers to their participation.

The Institute also commissioned Professor Peter Moss (Thomas Coram Research Unit, Institute of Education, University of London) to provide an international perspective on the issues encompassed by this research project. This international context helps explain the conceptualisation of "access" and the measurement of participation in ECE in an international context. The report by Professor Moss is included in Appendix A and the results from the literature review have been integrated throughout the report.

3.3 Data analyses

Analyses of existing datasets were undertaken to explore factors related to access to early childhood education services and to explore parental decision-making. The datasets primarily used were:

- the National Survey of Parents' Child Care Choices (NSPCCC), 2009;
- the Longitudinal Study of Australian Children (LSAC), 2008;
- the Australian Early Development Index (AEDI), 2009; and
- the Childhood Education and Care Survey (CEaCS), 2008.[3]

[3] See Acknowledgement and Appendix B for details of the organisations that fund and administer these projects.

The main uses of each dataset are summarised in Table 4.

Table 4 Summary of datasets used

Data source	Uses
National Survey of Parents' Child Care Choices (2009)	Children who were likely to be in the year before full-time schooling were identified and the analyses focused on these children. These data were then used to analyse: ■ parent responses regarding choices of early education; and ■ child, family and regional differences in participation in ECE, overall, and by type of ECE.
Longitudinal Study of Australian Children (2008)	The B cohort at Wave 3 was used, when children were aged 4–5 years (in 2008). Of these children, those identified by parents as being in the year before full-time schooling were the focus of the analyses. These data were then used to analyse: ■ parent responses regarding choices of ECE; and ■ child, family and regional differences in participation in ECE, overall, and by type of ECE.
Australian Early Development Index (2009)	From this source, data are available from almost all children across Australia in their first year of full-time schooling in 2009, on their enrolment in care or early education before starting school. This information was used to analyse: ■ child and regional differences in participation in ECE, overall, and by type of ECE; and ■ state/territory differences in how these factors relate to differences in ECE participation.
Childhood Education and Care Survey (2008)	This survey was used to analyse parental decision-making and barriers regarding participation in ECE, and in different types of ECE.

Each of these data sources had some limitations in being able to fully explore children's access to ECE. Difficulties in measuring ECE, as encountered in these analyses, are described in subsection 4.3 (on page 12). Appendix B includes details of how each dataset was used, and associated issues related to scope and definition.

Table 5 presents a summary of the estimates of participation in ECE—derived from NSPCCC, LSAC and AEDI—for children in the year before full-time school. NSPCCC provides estimates

Table 5 Estimates of participation in early childhood education in the year before full-time school

	NSPCCC	LSAC	AEDI
Participation rates	■ 18% no preschool or LDC ■ 7% LDC without preschool program ■ 24% LDC with preschool program ■ 8% LDC (with or without preschool program) and standalone preschool ■ 42% standalone preschool only	■ 7% no preschool or LDC ■ 12% LDC (did not select "LDC with a preschool program") ■ 17% LDC with preschool program ■ 10% LDC (with or without preschool program) and standalone preschool ■ 55% standalone preschool only	■ 11% no preschool or LDC ■ 25% LDC, with or without preschool program ■ 10% LDC (with or without preschool program) and standalone preschool ■ 54% standalone preschool only
Period of data collection	As at time of collection in May 2009.	As at time of collection. Most interviews held between April and October 2008.	Collected in 2009, in regard to ECE in 2008.
Methodology	Sample survey. Includes children estimated to be in year before full-time school, based on exact age of child and state of residence.	Sample survey. Includes children aged 4–5 years who were in year before full-time school, as determined by parents' reports of expected school attendance in the following year.	Population-based collection. Completed by teachers, using school enrolment details. Covers most children in first year of full-time school.
No. of observations	*N* = 1,637	*N* = 3,005	*N* = 236,251

Note: The different classifications used in each collection reflect differences in the underlying ECE data available from each source. The main differences relate to children in LDC, and being able to accurately identify those children who attended a preschool program in the LDC. This was captured well in NSPCCC. While LSAC allowed children to be classified to "LDC with a preschool program", some of those who were instead classified as "LDC" may have received a preschool program. In AEDI, a high proportion of teachers could not differentiate between LDC with or without a preschool program, and so this distinction was not used and, instead, if children attended an LDC this was classified as "LDC with or without a preschool program". See Appendix B for more detailed information.

for 2009, while LSAC and AEDI refer to participation in 2008. The AEDI data were collected retrospectively in 2009. The different timing of these collections may contribute to the variation across data sources in estimates of participation in ECE. Note that there are some differences in the data items and classifications used in each survey, because of differences in the availability of ECE information.

In each dataset, children in the year before full-time school were identified. Of these children, those participating in preschool or long day care were considered to be in ECE. Overall, in NSPCCC, 82% of children were in ECE in the year before full-time school, in LSAC 93% and in AEDI 89%. State-level estimates are shown in Table 6, with more detail, including the classifications shown in Table 5 (on page 11), presented in Appendix C.

Table 6 Estimates of participation in early childhood education in the year before full-time school, and comparison to 2010 NP ECE annual reports

	NSW (%)	Vic. (%)	Qld (%)	SA (%)	WA (%)	Tas. (%)	NT (%)	ACT (%)	Aus. (%)
Children in ECE									
NSPCCC (2009)	84.9	84.6	77.4	73.7	79.8	85.6	77.8	88.9	82.1
LSAC (2008)	89.8	98.7	81.0	99.6	99.7	100.0	100.0	100.0	92.9
AEDI (2009)	88.4	94.1	83.1	94.1	88.2	93.8	88.5	94.5	89.2
Children enrolled in ECE in 2010									
2010 annual reports	86.2	99.9	40	87.7	97.5	97.0	88.4	95.4	n.a.

Note: The discrepancy between survey estimates and official enrolment figures for Queensland relate to the different treatment of LDC in each source. All children participating in LDC are included in the participation rates in the survey data; however, in the official estimates, LDC is only included as ECE in particular situations.

Source: AEDI (2009), NSPCCC (2009), LSAC (2008) and COAG (2008) (see Table 3).

There is some variation in national and state/territory estimates, depending upon which source is used. These estimates also differ from the official estimates presented in Section 2. These differences reflect that each data source varies in scope, timing and the definitions of ECE used, as well as the underlying data collection methodology. We do not attempt to explain these differences in detail, but instead will be using these data to explore how participation rates (and types of ECE) vary within data sources according to different child, family and regional characteristics. We also do not consider one dataset to be superior to the others overall, as each has its strengths and weaknesses. For example, NSPCCC is useful because of the detailed questions concerning different types of ECE participation. LSAC is useful because of the large range of child, family and regional characteristics that can be related to ECE participation, in addition to the quite large sample size. The strength of the AEDI lies in the very large number of observations, with ECE information being available for all children in the dataset.

The focus throughout the data analyses is on overall levels of participation in and types of ECE. These analyses do not consider the hours of ECE received, nor workforce issues such as the educational attainment of early education workers.

Other datasets were considered when scoping this report. One potential data source was the Australian Census of Population and Housing. However, concerns about the data being able to identify children receiving early childhood education, as well as being able to identify those who were eligible, led to our decision to not include this data source. Data from the Australian Government Census of Child Care Services, the National Preschool Census and the National Early Childhood Education and Care Workforce Census were also not used in this report. There may be value in examining the potential for analysing early childhood education with these datasets in the future.[4]

[4] To examine issues specific to Indigenous children, we also considered using the National Aboriginal and Torres Strait Islander Social Survey and the Longitudinal Study of Indigenous Children (LSIC). These surveys offer the potential to analyse some of the detail of Indigenous children's participation in ECE (e.g., number of days or hours of ECE), but are less useful for measuring access in the same way as has been done with the other datasets. Also, participation in ECE by Indigenous children has already been analysed using LSIC data by Hewitt and Walter (2011).

4 Understanding "access" to early childhood education

This section explores how "access" to early childhood education services is defined, the factors that may affect access, and issues related to its measurement according to both the Australian and international literatures and from discussions with the key government and non-government stakeholders.

4.1 What is "access"?

The term "access" is often used in relation to the care and education of young children, but is often not clearly defined. In the context of the stated goals of the National Partnership, outlined in Section 1 of this report, "access", in its simplest form, can mean the opportunity to participate in ECE, among those families who would like their children to take part. At the most basic level, this can be interpreted as meaning that there are places available for all children whose families would like them. However, the goals of the National Partnership also highlight the importance of families having the freedom or ability to make use of ECE, as reflected in the focus placed on affordability, quality and participation rates within the National Partnership Agreement.

What is "access" according to key stakeholders?

A key question for the stakeholder consultations undertaken for the Access to Early Childhood Education Project was the way in which "access" was defined or conceptualised within the government jurisdictions or non-government organisations. The broad issues raised as part of the stakeholder discussions were similar in scope to those embedded within the National Partnership Agreement; that is, stakeholders generally described it in a multidimensional way, including the following components:

- creating opportunities for children to participate in ECE programs;
- providing enough time within the programs for children to learn; and
- allowing children to experience the program (and its potential benefits) fully.

The relationship between these components and the aims of the National Partnership Agreement, particularly for departmental officers, is not surprising given that they are working to implement the goals of universal access within their own jurisdictions. However, there was some variation that emerged in the discussions. To some extent, this was related to participants' own roles within their organisations (for example, people involved in managing and collecting data tended to be more focused on participation rates, while people from a practice background often saw the nature of children's experience as being at the core of access), as well as to what the core focus of their jurisdiction was at the time of discussions. Nevertheless, it is important to note that in all discussions, "access" was referred to in a multidimensional manner.

Not surprisingly, all officers from state and territory government departments involved in implementing the NP ECE, in the first instance described "access" as having enough places within the service system for all eligible children to be able to attend ECE programs:

> Access is the ability for every child to go and access a program. That a place is available for each child.
>
> *Departmental officer*

> There's an entitlement that any child … can access that year of education.
>
> *Departmental officer*

However, it was acknowledged that access was a more complex issue than simply providing a place:

> Basically, if you live in [state], you have the entitlement to be able to access a preschool … We certainly acknowledge the difficulties here that all families can access, you know, are able to access preschool, but there's "access" and there's "access". But from the position of the [state] government, we're providing it to all children, should they want it. That's a very important point.
>
> *Departmental officer*

So in most discussions with stakeholders (government or otherwise), the ability to provide a place for children to enrol in early childhood education, was seen as the "starting point" for providing access:

> Enrolments are our first starting point, basically, for determining the access to preschool programs. Another aspect that has to do with access is that we are targeting specific groups within the general population in terms of providing supply of preschool programs.
>
> *Departmental officer*

This notion of targeting specific groups to encourage participation was another issue frequently discussed by stakeholders. For many of the departmental officers, access was also being considered within their own jurisdictions in terms of who *wasn't* participating:

> For the first part of universal access, we hit the mainstream, but now we are focusing on the more hard-to-reach groups.
>
> *Departmental officer*

> Universal access is good for [state] because it gives us a chance to deal with some of the more fringe issues.
>
> *Departmental officer*

However, there was also general agreement among participants that some parents would ultimately choose never to make use of services, regardless of what was made available:

> That is the aim, to maximise access, but … some parents may feel they have access—they can easily access a service, but they don't want to.
>
> *Departmental officer*

Subsection 4.2 (on page 16) provides a more detailed discussion of the characteristics that stakeholders reported were associated with lower levels of access to early childhood education.

For many of the departmental stakeholders, a key focus in the discussion about "access" was also the amount of time that children spent in an ECE program. Again, to some extent this was driven by the agreement under the NP ECE, in which providing "access" involves delivering access to programs for 15 hours per week. While on the whole this was viewed positively by participants, it was also seen as being potentially a risk to access by specific groups, such as younger children (specifically relating to 3-year-old kindergarten programs) and children with special needs:

> It will certainly have an impact around supporting the inclusion of children with disabilities. I think that there will be a greater demand for resources to support their attendance for 15 hours.
>
> *Departmental officer*

A number of participants also extended the notion of access beyond examining participation rates and barriers to enrolments and attendance. They described the need to examine the extent to which children are able to fully experience the program they attend and be able to make the most of the benefits on offer:

> What does "access" really mean? … I think we're talking about getting children in the door, but we're actually talking around what is meaningful participation. I think that is the key too.
>
> *Departmental officer*

> Access is more than a place for every child. We understand that the place and the child need to be compatible. So where they're not compatible, we need to provide something a bit different.
>
> *Departmental officer*

Non-government stakeholders had less to say about the broader meanings of "access", as they tended to have a focus that reflected their more specific interests around barriers and particular groups. But some did provide some broader statements. Like those of the government stakeholders, these descriptions were multidimensional and took into account being able to both attend ECE programs and gain from the experience in a meaningful way:

> Access can mean many things. The ability to get a child to preschool for working parents, the ability of a child to access the curriculum and the supports for them to do so … Being able to access a preschool that is within the community (religious or cultural) that they are a part of.
>
> *Service provider*

> For optimal wellbeing, children and young people need to be actively engaged in learning, with a curriculum that meets their educational needs. Clearly, universal access (as defined by the NP Agreement) is an important, but minimum, first step.
>
> *Non-government stakeholder*

What is "access" according to the literature?

As was evident from discussions with the stakeholders, our review of the Australian and international literature found that "access" tends to be defined and conceptualised in a multidimensional manner.

At a minimum, such definitions usually involve a focus on creating opportunities for families and children to participate in ECE programs. However, providing access is usually acknowledged within the literature as going beyond simply having places available for children. For example, Press and Hayes, in 2001, described access to ECE as meaning that while "first and foremost places must be available; it must suit the family's needs in terms of location, hours available and the service provided; it must meet at least a minimum standard of quality; and it must be affordable" (p. 30).

Like the stakeholders interviewed for this project, the literature recognises that having enough places for all children to attend an ECE program does not mean that they will. For example, in his review for this project of early childhood education and care (ECEC) in OECD countries, Peter Moss (Appendix A) cited the OECD argument that "universal access does not necessarily entail achieving full coverage, as there are variations in demand for ECEC at different ages and in different family circumstances. Rather, it implies making access available to all children whose parents wish them to participate" (OECD, 2006, cited in Moss, Appendix A, p. A7)

However, Moss (Appendix A) agreed with Press and Hayes that "to make access to ECEC a realistic option—services have to meet certain conditions. For example they need to be free or available at a price parents can afford … to provide an offer that parents need and want, in terms for example of quality, opening hours and type of provision. In sparsely populated areas they need to be physically available … Last but not least, ECEC services need to recognise and be responsive to the diversity of children and families and their needs" (pp. A7–A8).

Another section of the literature states that access to early childhood education should be a "citizenship right" for young children and their families (Petriwskyj, 2010). In this way of considering access, children's ability to participate in ECE and to experience its benefits is seen as a key part of their rights as citizens of the countries in which they live. In this context, creating programs that meet the needs of the children who attend them—to be "inclusive"—is seen as a basic right for children. A key part of this discussion, however, is whether this can be achieved

by creating programs that can be inclusive of *all* children or whether more individualised and tailored programs need to be developed to meet different children's needs (Petriwskyj, 2010). Not all commentators see the notion of children as citizens as being useful for this debate, and they argue that to try and frame discourses around children's access to ECE does not take into account that children are not able to exercise their rights as citizens in the same ways in which adults can (both legally and practically) (Millei & Imre, 2009).

4.2 What factors affect access to early childhood education?

Taking into account both the literature and the consultations with stakeholders, it is clear that a key part of the "access" discussion involves the idea that not all children are able to make use of ECE equally; that is, there are factors that influence the extent to which different groups engage with ECE services, and there are a number of potential barriers that may affect children's and families' access to these services.

A number of factors affecting the participation of children in ECE that consistently emerged throughout the literature reviews and stakeholder consultations include:

- parents' preferences and beliefs;
- locational factors, such as remoteness and living in disadvantaged communities;
- the socio-economic status of families;
- the Indigenous status of families;
- whether children have a culturally and linguistically diverse background; and
- whether children experience disability or have special health care needs.

In line with these discussions, the literature and stakeholder discussions also identified a number of groups that were seen as being less likely to access ECE in the year before full-time school. These included:

- children from remote communities;
- children from socio-economically disadvantaged backgrounds;
- children from Indigenous backgrounds;
- children from non–English speaking backgrounds (NESB); and
- children experiencing disability or having special health care needs.

The findings from the literature review and stakeholder discussions for each of these factors and groups are provided below. These factors and groups also form the basis of the analyses of various datasets undertaken for the Access to Early Childhood Education Project. The findings from these analyses are reported on in Sections 5 and 6 of this report.

Parental decision-making and preferences

A strong theme in the discussions with stakeholders was that while governments can provide places that meet a broad range of families' needs, there would always be some families who would choose not to allow their children to participate in ECE. This reluctance on the part of families was sometimes seen by the stakeholders as being due to a lack of understanding of the potential benefits of ECE. Some participants were keen to find ways of better communicating these benefits to families; however, others felt there would always be a small group who believed that children should not be cared for by adults other than family members until they commenced full-time school.

Research around parental beliefs about the use of child care does support this latter view (Hand, 2005; Hand & Hughes, 2004; Holloway, 1998). In addition, the research has found that these concerns may be mitigated if parents feel that the programs offered fit with their own parenting beliefs, or are offered by providers who they see as supporting their own childrearing beliefs and practices (Holloway, 1998; Wise & Da Silva, 2007). This argument was also posited by Moss (Appendix A), who noted that "changing parental expectations and understandings

of good parenting and a good childhood" can also affect demand from parents for ECEC, as does "a high level of parental satisfaction with well developed and accessible" systems of ECEC (p. A7).

Location

A key issue for many of the jurisdictions was the provision of ECE for children living in remote locations. More remote regions are, by definition, further away from the larger service centres and so when services are required, travelling distances can be large. In itself, this is likely to affect rates of access to ECE, and consultations with stakeholders frequently raised the challenges of service provision in remote areas. This was often discussed in terms of distances to be travelled; however, it was also acknowledged that as remoteness increases, population density declines, and because of the sparser distribution of the population, smaller numbers of services can be funded to meet the needs of families in those areas, again potentially increasing the distances families need to travel. Conversely, if the program is delivered closer to home, it may decrease the potential for children to experience the more social aspects of ECE if there are no other children of the same age available to participate.

The availability of suitably qualified and experienced staff is also an ongoing issue for remote area service provision. Attracting and retaining staff to remote services was a key concern for many stakeholders and, as recorded in other research, it was noted that even where ECE teachers were available to provide programs, ongoing turnover of staff had the potential to diminish quality, as "in these communities, there is little consistency or knowledge of local families and children" (Walker, 2004, p. 39).

It is likely, then, that families in remote areas may have more difficulty in accessing a high-quality ECE service within a reasonable distance from their home.

Socio-economic status of families

A key concern for participants in the stakeholder discussions was the engagement of families who live in disadvantaged areas or experience socio-economic disadvantage. Stakeholders from both government and non-government sectors reported that children from low socio-economic backgrounds continue to be under-represented in ECE. This was seen to be a result of a number of factors, including issues relating to costs (real or perceived), a lack of awareness of available services or the benefits of ECE, and the "interference" of other factors that co-exist with financial disadvantage, such as parental physical and/or mental health issues, drug and alcohol problems and poor experiences of education. Other potential barriers for this group included parents having a lack of access to transport, having poor English language skills and not feeling welcome by the services available to them.

Local area disadvantage is increasingly being seen by government as an important factor in the ways in which families are able to interact with services (Hayes, Gray, & Edwards, 2008). A lack of local services, poor transport options and concerns about safety can be barriers to people accessing locally provided services (Hand, Gray, Higgins, Lohoar, & Deblaquiere, 2011). Qualitative research suggests that even where local services can be physically accessed, families living in disadvantaged areas may choose not to engage with local services for a number of reasons, such as concerns about quality and not wanting to engage with other local residents (Hand et al., 2011). In the context of education services, some parents may actively choose to make use of services outside of the area in which they live to try and expose their children to what they believe to be a more positive peer group (Hand et al., 2011).

Across Australia, the socio-economic status of regions can be measured with respect to the levels of income and employment of people living in those regions. This is commonly done using an index of the socio-economic advantage or disadvantage of the region (Trewin, 2004). In regions in which residents have more resources, this may flow through to them having better resourced services available. In contrast, when residents have relatively low levels of personal income or employment, services may be more limited, or perhaps may not include the quality of services that can be found in better resourced areas. That being said, it is also possible that more disadvantaged regions may have a range of services that specifically cater to the needs

of disadvantaged families; for example, ECE programs that target more vulnerable families. Further, and as discussed above, residents may draw upon services outside the local area, in which case using a measure of local area advantage or disadvantage may not be a strong predictor of levels of access to services.

Using an index of the socio-economic advantage or disadvantage of the region, previous research has shown that children living in more disadvantaged regions have lower levels of access to ECE (Harrison et al., 2009).

In more disadvantaged regions, it is also expected that there will be a higher proportion of families experiencing financial hardship and joblessness and having lower levels of parental education (Hayes et al., 2008). Single-parent families and families with a non–English speaking background are also more likely to be living in financially disadvantaged regions than are couple-parent families and families from mainly English-speaking backgrounds (Hand et al., 2011; Hayes et al., 2008). Therefore, lower rates of access to ECE in more disadvantaged regions may be related to there being a higher proportion of families in these areas experiencing barriers to ECE, or for other reasons, being less likely to take up opportunities for ECE.

That some regions can be identified as having a higher level of disadvantage means that services in a region—including ECE—can be targeted to address take-up and retention by the harder-to-reach or more vulnerable families who are likely to be living in those regions. As mentioned above, this place-based approach is increasingly being seen as an important way of engaging families experiencing disadvantage.

There are numerous issues woven together here when we consider characteristics such as these. For one thing, there are likely to be strong associations between these factors. For example, low income is likely to be experienced by jobless families, single-parent families, and families with relatively low levels of education. The issues faced by more disadvantaged families may be varied, including the following:

- low income may affect the affordability of services or costs of transport;
- low education levels may affect knowledge of services and awareness of the value of ECE for children;
- joblessness may mean parents are home to care for their children, and this may be viewed in some families as being preferable to having non-parental care; and
- previous experiences with accessing services may lead parents to have negative views about service use.

In families with very low levels of parental employment, financial concerns (as discussed above) may influence parents in regard to children's early education (Elliott, 2006). Also, when parents are not in employment, this usually means they are available to care for their children at home, and this may act as a deterrent to parents accessing ECE programs. In some cases, as discussed earlier, this may also reflect a belief that non-parental care is not appropriate for young children (Hand, 2005).

It is also relevant to note that parental employment is likely to increase parents' needs for care for their children, and in particular may mean a need for regular, long hours of care. This is particularly relevant when considering the type of ECE that children use, but also means that children of employed primary carers are more likely to be in some type of ECE compared to those of not-employed primary carers. This need to juggle parental employment and accessing ECE was also acknowledged as an issue for many parents during the stakeholder discussions, with participants acknowledging that traditional preschool hours created some challenges for working parents and that ECE delivered within a long day care setting could be a more practical option for these parents.

Single parents and their children are considered to be vulnerable to adverse outcomes, given that indicators of family and child wellbeing often show poorer outcomes in these families. For example, children living in single-parent, as compared to couple-parent families, are likely to differ on a range of family circumstances; for example, being at greater risk of being in a family that has financial hardships, living in a socio-economically disadvantaged area, and having a parent with relatively low education (Gray & Baxter, 2012). Such differences may matter more than the fact that the child is parented by one rather than two resident parents. Putting aside

issues of socio-economic disadvantage, however, there does not appear to be strong evidence of ECE participation being any lower for single-parent compared to couple-parent families. The stakeholder discussions did not highlight any particular issues for single-parent families.

It is important to note, though, that having poorer socio-economic status does not always entail poorer outcomes for children. Parents from a wide range of circumstances, including those in low-income families or communities, who are without employment or without a partner will nevertheless seek out opportunities for ECE for their children. For some, this may reflect a strong desire for their children to have good opportunities for learning or to improve their life chances beyond their own (Hand et al., 2011) Therefore, it is important to be aware that the association between socio-economic status and ECE is a complex one.

Indigenous children and families

Previous research has shown that children of Indigenous backgrounds have lower levels of participation in ECE than those of non-Indigenous background (Biddle, 2007), and the need to address access for Indigenous children has frequently been identified (e.g., Mann, Knight, & Thomson, 2011). Targets regarding Indigenous children's access to ECE are in place and various ECE programs have been developed with the aim of addressing the needs of Indigenous children and families (Shepherd & Walker, 2008; Trudgett & Grace, 2011).

The relatively low rates of participation by Indigenous children in ECE are related, in part, to the characteristics of their families, with higher percentages of Indigenous families than non-Indigenous families having lower incomes, having lower levels of parental education and living in more remote areas of Australia. The issues are, however, more complex than this. As noted by Shepherd and Walker (2008):

> Indigenous communities that are functioning well are characterised by families who are engaged in their children's early development, including the development of cultural identity and resilience. However, there is evidence to suggest that many Indigenous families are disengaged from their children's educational progress. For many Indigenous families this may be the result of their own poor experiences at school—experiences marred by racism and a lack of respect for Indigenous people and culture. As a result, many Indigenous families do not have the capacity to support their children's learning nor sufficient trust in, or understanding of, education systems. (p. 19)

For Indigenous children, particular problems arise in retaining these children in ECE and having them attend regularly. As noted by Trudgett and Grace (2011), the enrolment of Indigenous children is not such a great problem, but attendance is. This is evident in higher absentee rates for Indigenous compared to non-Indigenous children in preschools (DEEWR, 2009).

The literature points to a number of factors that are of particular relevance to ECE for Indigenous children (e.g., Mann et al., 2011; Walker, 2004). For example, based on a small-scale study of eight preschools funded under the Supporting Children with Additional Needs (SCAN) program, Mann et al. concluded:

> The research affirmed that staff, environment and atmosphere needs to be welcoming in the initial stages of developing culturally inclusive services. It also affirmed that in the long term, much more is required to sustain relationships with Aboriginal families, and provide a curriculum that supports culture and equitable learning opportunities. Ideally Aboriginal children should have specific services, with qualified Aboriginal teachers and staff that develop a teaching program to meet cultural law and practices, and equip children to meet the dominant educational norms. (p. 3)

These researchers provided detailed information on the characteristics that were commonly found among preschools that had a high rate of access by Indigenous children.

Walker (2004) raised the following issues:

- the remoteness of areas in which many Indigenous children live being characterised by lower levels of availability of preschool programs;
- staff working in these areas not being sufficiently qualified and/or being inexperienced, with no long-term experience working in that program;

- Indigenous staff with appropriate qualifications or skills being especially difficult to find and retain;
- programs not addressing cultural issues adequately;
- infrastructure being a problem in relation to adequate and appropriate space, resources and equipment;
- funding issues affecting the matters above; and
- transport being a central concern.

In a study by Trudgett and Grace (2011), "trust" was seen as a significant factor.

Promoting the participation of Indigenous children in ECE programs was a key theme in all stakeholder discussions. Stakeholders highlighted these same issues and acknowledged that the provision of services that were welcoming and culturally appropriate were key goals across the different jurisdictions. Providing flexibility to meet the needs of Indigenous families who may be geographically mobile was seen as important by a number of stakeholders. A key concern was also the need to build trust with families where parents themselves may have had poor experiences of education services as children, and may be reluctant to expose their own children to such negative experiences.

Culturally and linguistically diverse families

Lower rates of participation by children from culturally and linguistically diverse families have previously been observed (ABS, 2009; Walker, 2004). For example, using the 2008 CEaCS, the ABS (2009) reported that of 3–5 year old children, the percentage in preschool (or a preschool program in an LDC) who spoke English as their main language was 73%, compared with 60% for those who mainly spoke a language other than English at home.

In discussing the situation in Victoria, Walker (2004) noted:

> Children from culturally and linguistically diverse backgrounds are less likely to access preschool because of the fee structure and lack of understanding about preschool education. A number of submissions raised these issues and highlighted that families in poverty, families who have recently arrived in Australia, families where English is not their first language, often do not understand the Victorian system of preschool and school. Assumptions are sometimes made that if preschool is not part of school, then it isn't important. At times, there are other priorities for families, particularly those living in low socioeconomic areas or in poverty. (p. 28)

The characteristics of families are likely to vary according to whether children have a non–English speaking background, with socio-economically disadvantaged families more highly represented in these families. As such, families may be faced with barriers related to income as well as language, and perhaps concerns about the cultural appropriateness of services. These issues are discussed by Warr (2007), who undertook research on how one early learning centre approached promoting participation in preschool education in a relatively disadvantaged area (the area had a large population of people born overseas, high levels of unemployment and rated poorly on other indicators of disadvantage).

Discussions with key stakeholders provided similar insights into the participation of children from CALD backgrounds in ECE services. Participants generally noted that children from CALD backgrounds were at risk of lower rates of participation in ECE programs. In part, this was seen to be related to language and cultural barriers; however, children from more recently arrived communities in Australia, particularly refugee families, were seen to be more at risk than those from more established communities of not attending or having less positive experiences of ECE programs because of issues of language and culture. Parents from more recently established migrant groups were also seen to have less knowledge of the services available to them and the potential benefits of ECE programs.

Children with disabilities or special health care needs

Participation in ECE may be difficult for children with disabilities or special health care needs if parents are seeking a place in a program that can attend to the special needs of their child.

Previous research has highlighted the difficulties in accessing high-quality ECE by children with special needs (Walker, 2004). This applies not only to finding a program that the child may attend, but also applies to the ability for these children to fully participate in the program. This particularly relates to the availability of appropriate staff and the ability of staff to effectively engage with individual children given the number of children in a particular program.

Interestingly, stakeholders were least likely to discuss children with disabilities or special health care needs when discussing access issues. However, it was noted that preschools may provide opportunities to identify the special needs or health care issues of children prior to their starting school. Where preschools are well linked up with other services, this can mean children are referred to health care or other specialists; hence, the preschool experience and its associated early learning programs may be just one aspect of how access to ECE can be beneficial to children and families.

4.3 What issues are reported in the measurement of access?

There are a number of issues that are important in being able to accurately measure access. In part these issues are related to the multidimensional nature of access and the difficulty in being able to identify and engage with those who are not making use of ECE to the same extent as with those who are. These issues were often discussed by government stakeholders in the context of measuring access.

In Australia, the issue of being able to measure access by children to ECE in the year prior to full-time schooling is further complicated by the diversity of the service systems that are in place, both within and between jurisdictions, as well as the variation in ages at which children commence school and the different terminology that is used in reference to ECE programs for children in the year prior to full-time schooling.

This has been acknowledged elsewhere by a number of Australian commentators (e.g., Dowling & O'Malley, 2009; Elliott, 2006; McEwin & Ryan, 2008). For example, Elliott noted that:

> Gaining an accurate overall picture of early childhood services and participation is difficult, however, as there are no centralised or national processes to measure or record supply and capacity, children's attendance, staffing and quality, or education and developmental inputs or outcomes … The lack of a common starting age across Australia further complicates the picture. State-based comparisons are difficult to make as children start school at different ages, so they start or finish preschool … at different ages. (pp. 8–9)

Consultations with departmental stakeholders also involved some discussion of measurement issues. The key issues for stakeholders included:

- being able to measure access across multiple sectors;
- knowing when children were accessing more than one program (double-counting);
- identifying how many children were not accessing programs; and
- knowing who these children were.

These stakeholders expressed support for moving to a more uniform measurement across jurisdictions, acknowledging that the complexity of systems posed a significant barrier for accurately measuring participation. In particular, gaining data from privately operated programs (particularly early learning centres and long day care centres) was challenging and often meant relying in Commonwealth statistics:

> We did a piece of work a few years ago looking for that missing [proportion of children who were not attending ECE] and through that work found that a significant proportion of that group were getting an early childhood program but in a LDC setting that wasn't funded for kindergarten, so they were getting a program but it wouldn't be one necessarily delivered by a teacher. It's not that they weren't engaged with the early childhood system, but just not with [state-funded ECE].
>
> *Departmental officer*

Many of the government stakeholders were keen for the 2011 Australian Census population figures to become available as it was becoming increasingly difficult to estimate the size of the population of children eligible to take part in ECE under the National Partnership Agreement each year using 2006 Census figures. The relatively high mobility of many Aboriginal and Torres Strait Islander families also means that in some jurisdictions it is hard to identify and track the usage of ECE by eligible Indigenous children within the population, so other sources, such as maternal and child health services, have to be used.

Some participants also noted that in their experience not all Indigenous families identify their children as Indigenous when they first engage with the ECE system, sometimes waiting until their children are older. This creates some challenges in the measurement of the participation of Indigenous children:

> There's the issue of Indigenous children being identified at kindergarten. That's a problem. Because there's a much lower identification in the early years, and it increases as the children get older. [Interviewer: So the parents are not identifying their children as Indigenous?] … That's right.
>
> *Departmental officer*

Measurement issues also apply when attempting to use survey data to analyse participation in early childhood education. One difficulty is in identifying those children who are in the year before full-time school; that is, those who are eligible for ECE in the context of the NP ECE.[5] The other is in identifying those children who are receiving ECE, and the type of ECE they receive.

With respect to who is eligible for ECE, complications arise because:

- the age at which children are in the year before full-time schooling, and therefore eligible to attend preschool, varies from state to state, given that school entry eligibility varies across jurisdictions;
- exact child age in months is needed (and the survey date), along with state identifiers, to determine whether children are eligible to start school the following year; and
- even with this information, in assessing whether children are in the year before full-time school, it is problematic to base this entirely on the children's age since parents may elect to delay their child's entry into full-time schooling (Edwards et al., 2011), such that children who are eligible to attend school the following year may actually not start school until one year later.

In relation to who is receiving ECE, and the types of ECE, key issues are:

- The use of different nomenclature for preschool and for the first year of school across the states can cause difficulties for interviewers and/or respondents when capturing information about children's participation in ECE.
- Some children receive their preschool education through long day care, such that the line between child care and ECE can be blurred. Some parents may not be aware of whether their child receives a preschool program in LDC, while some parents may find it difficult to say whether their child attends a preschool as opposed to a child care centre.
- Some children attend preschools attached to schools, and these children may be misreported as attending school when they are in fact in preschool, or as not attending any prior early childhood education/care before starting in school.
- Given the above, parent-reported information may be somewhat unreliable. (This has implications also for AEDI, which is reported by teachers, but based on information provided by parents when enrolling their child in school.)

Measurement issues in relation to the specific datasets used in this report are discussed in Appendix B.

[5] While some children are entitled to ECE two years before full-time school, this report focuses on measuring access to ECE in the year before full-time school.

5 Differential access to early childhood education

In Section 4 we discussed the fact that access to ECE is not currently universal, as measured in terms of participation in ECE in the year before full-time school. In the literature and stakeholder consultations, several groups of children were identified as being at greater risk of missing out on access to ECE. This section now explores how rates of participation in ECE vary according to the range of factors discussed in Section 4, through statistical analyses of the three Australian datasets described in Table 5 (on page 11).

This section focuses on access in terms of participation in ECE. Clearly, this is a quite limited definition of access to ECE, considering the various dimensions of access that have been discussed in this report (especially in Section 4). Nevertheless, this measure of participation has the advantage of being easily understood and easily compared over jurisdictions and time. Compared to more sophisticated measures, it is also relatively easy to derive from existing datasets (although not without problems, as discussed in Section 4 and Appendix B).

The analyses in this section consider children to be in ECE in the year before full-time school if they are in either preschool or long day care. Preschool refers to ECE programs delivered through preschools or kindergartens, or other equivalent programs offered across Australia. *Any* participation in LDC is counted as ECE, regardless of whether parents reported that their children had a preschool program as part of LDC. It was felt that any LDC for children of this age is likely to involve a structured program, and would be expected to have some component of early learning built in. Also, the decision to include any LDC as ECE was partly due to data quality concerns about the distinction between LDC with and without preschool programs.

The *type* of ECE program (that is, LDC compared to preschool) will be the focus of Section 6 and so is not examined here.

The analyses presented here examine how characteristics of children, families and regions are related to different rates of access to ECE, to identify those factors that are related to lower levels of access. The focus is on those groups of children who are frequently acknowledged (by stakeholders and in the literature) to be likely to have higher rates of non-participation in ECE (sometimes referred to as being part of hard-to-reach families) (e.g., Walker, 2004).

This section examines how ECE participation varies with:

- remoteness of regions;
- socio-economic status of regions;
- socio-economic characteristics of families (parental income, employment, single- versus couple-parent families, parental education);
- Indigenous background of families;
- non–English speaking background of families; and
- children with special health needs.

Before beginning these analyses, we first present some analyses of parental decision-making, and barriers that may affect children's participation in ECE. As discussed in Section 4, stakeholders often see parents' decisions about children's non-participation in ECE as being the hardest barriers to both understand and address. These analyses, therefore, help to understand the potential role of parental beliefs on differential access to ECE. For example, these analyses can

provide insights into the extent to which issues of accessibility and cost may present barriers to children's participation in early education (Moss, Appendix A; Press & Hayes, 2001).

5.1 Parental decision-making about participation in early childhood education and identified barriers

To explore parental decision-making regarding children's participation in ECE, three datasets were examined, making use of questions asked of parents about why their child did or did not attend preschool (or child care) in the year before full-time school. A full description of these analyses is presented in Appendix D.

In many cases, non-participation is reported across the three datasets to be because a parent is already available at home to provide care and therefore ECE is not necessarily needed; that is, reasons were often framed in relation to the idea of child care, rather than education. For example:

- In the NSPCCC, the most common reason for children's non-participation in formal care or ECE identified from parents' responses was "belief in importance of home care" (22% of parents). In addition, a significant number of "other" responses were coded to a range of options, all of which suggested that a parent was at home to care for the child, and care was not needed (another 36% of parents, plus another 3% who also referred to the importance of home care).
- Using LSAC (B cohort, Wave 3), parents of 4–5 year old children who were expected to start full-time school the next year but were not enrolled in ECE were asked why they did not use ECE. The largest response groups were "parent is available—not needed" (20%) and "child does not need it" (19%).
- Using CEaCS, among children aged 4–8 years who were in school and had not attended preschool or LDC prior to school, the main reason given for non-attendance was "prefer to care for child at home" (73%).

While these responses give the perception that for many parents, non-participation in ECE is a conscious choice, this may be too simplistic an interpretation. It would be useful to gain an understanding of how parents come to this arrangement, and to examine whether parents understand about the availability and benefits of ECE. As discussed in Section 7, qualitative research would be the best source of this information. We have used the survey data here to provide some initial insights.

Within each survey, there were a number of respondents who cited reasons for a child's non-participation in preschool (or child care) that were more indicative of barriers.

- In NSPCCC, of children who were in the year before full-time school but not in formal care or ECE, 41% of parents gave reasons other than parental availability (although they may have also provided a response around parental availability, as multiple responses were permitted), including that the ECE arrangement (care or preschool) was too expensive (16%), the parent lacked trust in formal child care (9%), the parent already had friends or family looking after the child (6%), the ECE was too far away (6%), or the ECE was too difficult to get into (1%). Quite a large number of responses were recorded as "other" (14%).
- In NSPCCC, parents were asked why their school-aged children had not attended preschool (5% of children, $N = 59$). Of these, 6% gave answers indicating that there were no places available and 14% that they could not afford it. However 82% of responses were coded to "other reasons" and could not be further identified. (Percentages add to more than 100% as multiple reasons could be given.)
- In the LSAC sample, in addition to those reasons mentioned in relation to LSAC above, other reasons given were "can't afford it—cost too high" (16%), "other—quality/program issues" (12%), "child is too young or old" (10%), "problems with getting places" (9%), and "other—accessibility or affordability" (7%).
- In CEaCS, after "prefer to care for child at home", the next most common reason for children not attending preschool or LDC was "other reasons" (15%), followed by "moved from interstate or overseas" (6%).

More explanatory information regarding the questions and response options upon which these analyses are based is given in Appendix D.

Additional qualitative research about parents' decisions regarding the use of non-parental care in the year before full-time school supports the complexity of findings detailed here. For example, when asked about their decision not to use child care, mothers in the Family and Work Decisions' Study would often state more than one concern about this form of care (Hand, 2005). Like the parents in the above studies, not needing child care because a parent was home was usually the primary reason; however, issues of trust, affordability and a lack of places at their preferred service were also frequently cited. Furthermore, many of those mothers who chose not to work in order to care for their children did so due to concerns about trust and affordability.

It is important to understand which families report the different reasons cited above. Sample size limitations mean these data cannot be analysed comprehensively by the socio-demographic characteristics examined in the rest of this section; however, where possible, we do highlight some key findings that emerge.

5.2 Factors influencing participation in early childhood education

The rest of Section 5 presents analyses of how ECE participation varies by child, family and regional characteristics. These analyses were conducted using each of the NSPCCC, LSAC and AEDI datasets. The analyses compare children in ECE (preschool and/or LDC) to those not in ECE. The latter includes those only in parental care, informal care or non-ECE types of formal care.

The analyses include some straightforward tabulation of participation rates by those factors listed previously. In addition, as multiple factors are likely to be important in explaining how participation in ECE varies, it is appropriate to use multivariate analyses. This allows us to determine whether particular factors have independent associations with ECE, once other characteristics are taken into account. For example, we begin by examining how ECE participation varies with the remoteness of the region in which children live. By using multivariate analyses, we can see whether remoteness is a significant factor in explaining differences in rates of ECE participation when other characteristics, such as the Indigenous status of children and socio-economic status of their families, are taken into account.

All analyses focus on children who were, or were predicted to be, in the year before full-time schooling. For NSPCCC, child age (in months) was compared to state/territory eligibility regarding school starting age, and used alongside information on current ECE or school participation to determine whether children were likely to be in the year before full-time school. For LSAC, children were identified by their responding parent as being in the year before full-time schooling. For AEDI, data on ECE participation before commencing school was collected retrospectively for all children, as the study children were already attending school at the time of the collection.

The following subsection describes the methods used in the multivariate analyses. Refer in particular to Box 1 (on page 26), which describes how to interpret the findings from the multivariate analyses.

Description of multivariate methods and summary of findings

Multivariate analyses were used to identify those characteristics associated with children being more likely to participate in ECE. As discussed above, LDC and preschool were counted as ECE. Classifying children as being in ECE or not in ECE in this way results in a binary classification, which can be modelled using logistic regression.

Where possible, the analyses take account of the child's Indigenous status, having English as a second language, having special health care needs, child age, parental employment and education, household income, remoteness and socio-economic status of the region. Exact

details vary depending upon which data source is used (as different information is available for each dataset). See Appendix E for further information about the details of these models.

In all models, an indicator of whether children lived in the larger eastern states of NSW, Victoria or Queensland (as opposed to South Australia, Western Australia, Tasmania, NT and ACT) was used. This distinction was used because ECE tends to be delivered in different ways within these broad grouping of states/territories; in particular, there is a greater reliance on LDC in the eastern states (see earlier discussion in Section 2).

First, an overall model including all children was estimated from each data source. Second, using the AEDI (given the very large size of the dataset), similar analyses were undertaken for each state/territory individually. These models omit the various family characteristics, as these were not available in the AEDI data. Then, in further analyses, the Australian models were replicated for families with specific characteristics (by remoteness, Indigenous versus non-Indigenous, whether English is main language spoken), using the AEDI. Only the AEDI contained a sufficiently large sample to satisfactorily undertake this more disaggregated analysis.

The results from each of the models are presented as odds ratios, which can be interpreted as shown in Box 1.

Box 1: Interpretation of multivariate results

Results from logistic regresssions are presented in this report as odds ratios (*OR*). The "odds" of having a particular outcome is the probability of having it, expressed as a ratio of the probability of not having it. Odds ratios are an estimate of how the "odds" vary for those with and without a particular characteristic.

In these analyses, the odds ratios provide an indication of whether being in ECE is more likely (when the odds ratio is greater than 1) or less likely (when the odds ratio is less than 1) for those with a particular characteristic, compared to those not having this characteristic. The size of the odds ratio indicates how much participating in ECE varies according to this characteristic. Thus, if the odds ratio is greater than 1, the larger the number is, the more likely it is that the child is participating in ECE. If the odds ratio is less than 1, the closer the number is to 0, the less likely it is that the child is participating in ECE. When the odds ratio is equal (or close to) to 1, there is no difference between those with and without that characteristic in their likelihood of participating in ECE. This applies, for example, when examining indicator variables such as Indigenous status of the child, non–English language status and special health care needs status.

In the case of variables with more than two categories (such as remoteness and primary carer's employment), a reference (ref.) category is established. This category is identified in the results tables and is always shown with an odds ratio of one. The odds ratios for other categories then compare the odds of being in ECE for each of those categories with that of the reference category. For example, in Table 7 (on page 27), for remoteness, the reference category is "major cities". The odds ratios are lower for all of the other categories, indicating that ECE participation is lower in all other remoteness areas than it is in major cities.

Note that a limitation is that these odds ratios only allow comparison back to the reference group in a strict sense, although the relative size of the other odds ratios can be used as a guide to how participation in ECE compares across other groups. For example, using the AEDI results in Table 7, the odds ratios for outer regional areas and remote or very remote areas are 0.76 and 0.55 respectively. These odds ratios are based on comparisons for each group to the reference group of major cities. The relative size of these odds ratios suggests that ECE participation is less likely in the more remote areas, compared to outer regional areas. However, further statistical tests would be required to assert this with certainty.

The stars in the table indicate the statistical significance of each odds ratio. If there are no stars on a figure, this indicates that, according to conventional levels of significance, this odds ratio does not differ significantly from 1; that is, this characteristic is not significantly associated with ECE participation. A greater number of stars indicate that we have greater confidence that this variable has a significant association with ECE participation. Looking at the remoteness example in Table 7, the difference between inner regional areas and major cities in children's participation in ECE is not statistically significant for NSPCCC, but is for AEDI.

The results of the overall multivariate analyses are presented in Table 7, and the state/territory analyses in Table 8 (on page 28). These results are discussed in the subsections that follow, taking one characteristic at a time. We first consider local area characteristics (remoteness and socio-economic status of regions). The socio-economic status of regions is measured using the Socio-Economic Index for Areas (SEIFA) score of relative disadvantage, which captures information about local area disadvantage, such as low income, low educational attainment, high unemployment and relatively unskilled occupations (Trewin, 2004). The distribution of scores in the dataset was used to classify children as living in areas with SEIFA scores in the bottom 20%, the middle 60% or the top 20%. Then socio-economic characteristics of families are examined, including family income, parental employment, single- versus couple-parent families, and parental education. Finally, the results are presented for Indigenous background, non–English speaking background and children with special health needs. State/territory differences are discussed throughout these analyses.

Table 7 Multivariate analyses of which children are in early childhood education in year prior to full-time schooling, AEDI, NSPCCC and LSAC

	AEDI (*OR*)	NSPCCC (*OR*)	LSAC (*OR*)
Eastern states (NSW, Vic., Qld) (ref. = All others)	0.78***	0.95	0.04***
Locational factors			
Remoteness (ref. = Major cities)	1.00	1.00	1.00
Inner regional areas	0.91***	0.86	0.88
Outer regional areas	0.76***	0.62*	0.53**
Remote or very remote areas	0.55***	0.50***	0.38
Socio-economic status of region (ref. = Most disadvantaged, bottom 20%)	1.00	n.a.	1.00
Middle advantage, middle 60%	0.88***		1.24
Most advantaged, top 20%	1.24***		1.48
SEIFA not available (NT in AEDI)	1.84***		n.a.
Socio-economic status of families			
Family income (ref. = Higher incomes, top 20%)	n.a.	1.00	1.00
Lower incomes, bottom 20%		0.75	0.49
Middle incomes, middle 60%		0.85	0.72
Parental employment (ref. = Not employed)	n.a.	1.00	1.00
Employed part-time		1.96***	1.90***
Employed full-time		2.71***	1.39
Single parent (ref. = Couple parent)	n.a.	1.58	1.35
Parental education (ref. = Incomplete secondary)	n.a.	1.00	1.00
Secondary, diploma or certificate		1.62**	1.59*
Bachelor degree or higher		1.53*	3.21***
Indigenous child	0.53***	1.09	0.26***
Non–English speaking background	0.46***	0.79	0.63
Special health care needs	0.70***	n.a.	1.29
Age at survey (months)	n.a.	0.93***	1.05
Constant	13.06***	203.88***	11.38
Sample size	236,206	1,610	2,936

Note: In these analyses, enrolment in any preschool or LDC was counted as being in ECE. See Appendix E for further information about the variables listed. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

We can see that the results do vary somewhat according to which source is used, which may reflect the differences in how ECE participation was captured in each source and in the timing of collections (NSPCCC referred to 2009, while the others referred to 2008). (See Table 4 on page 11 for descriptions of the different data sources.) Further, the models are not exactly the same; in particular, with family-level details not available for AEDI. This may mean the regional

Table 8 Multivariate analyses of which children are in early childhood education in the year before full-time schooling in each state and territory, AEDI

	NSW (*OR*)	Vic. (*OR*)	Qld (*OR*)	SA (*OR*)	WA (*OR*)	Tas. (*OR*)	NT (*OR*)	ACT (*OR*)
Locational factors								
Remoteness (ref. = Outer regional areas)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Major cities	0.85***	1.18*	1.26***	1.04	1.35***	n.a.	n.a.	n.a.
Inner regional areas	1.00	0.89	1.06	0.94	1.09	1.97***	n.a.	
Remote or very remote areas	0.71***	0.40***	0.78***	0.74	0.85	0.80	0.86	
Socio-economic status of region (ref = Most dis-advantaged, bottom 20%)	1.00	1.00	1.00	1.00	1.00	1.00	n.a.	n.a.
Middle advantage, middle 60%	1.13**	1.05	0.72***	1.00	0.68***	1.62***		1.11
Most advantaged, top 20%	2.15***	1.21*	1.18	1.22	0.77*	1.33		1.00 [a]
Indigenous child	0.48***	0.35***	0.67***	0.57***	0.66***	0.84	0.60**	0.53
Non–English speaking background	0.42***	0.36***	0.52***	0.42***	0.56***	0.25***	0.47***	0.61**
Special health care needs	0.88*	0.46***	0.51***	0.92	0.77*	0.56*	0.86	0.65
Constant	8.35***	16.90***	5.46***	17.79***	9.39***	8.23***	14.86***	19.06***
Sample size	80,277	56,713	47,034	14,814	25,291	5,306	2,796	3,975

Note: In these analyses, enrolment in any preschool or LDC was counted as being in ECE. See Appendix E for further information about the variables listed. [a] As no ACT areas were classified as being in the most disadvantaged category, the reference category here was changed to the most advantaged areas. * $p < .05$; ** $p < .01$; *** $p < .001$

Source: AEDI (2009)

and child-level characteristics are capturing more of the variation than they would, had family-level been available for inclusion in the analyses.

With the AEDI data, all of the variables included explain a significant amount of the variation in rates of participation in ECE, with lower participation in more remote areas; higher participation in more advantaged areas (although "moderate" advantage had lower participation than the most disadvantaged areas); lower participation in the eastern states; and lower participation among Indigenous children, NESB children and children with special health care needs. For NSPCCC, lower participation rates were apparent for the more remote areas, while higher participation rates were apparent when parents had higher levels of educational attainment and were employed part-time or full-time. An unexpected finding is that the association with age of child revealed lower participation in ECE among the older children (remembering these are all children in the year before full-time school). Using LSAC, children in outer regional areas have significantly lower participation rates than those in major cities. (The difference was not statistically significant for remote areas.) Participation rates were lower for children in the eastern states, and for Indigenous children. As in the NSPCCC, participation rates were higher when parents had higher education levels and when they were employed. In these data, participation rates were only significantly higher when the primary carer was employed part-time.

The multivariate analyses conducted for states and territories separately, using the AEDI, revealed some consistent (or near consistent) findings (Table 8). For example, lower participation rates in ECE were apparent in most states and territories for Indigenous children (the exceptions being Tasmania and the ACT). In all states and territories, NESB children had lower participation rates. There was more variation across states and territories in respect to how ECE participation varied according to the remoteness of the area and the disadvantage of the area.

These findings are discussed further in the sections that follow.

5.3 Locational factors

Children's participation in ECE is likely to be dependent upon the ECE options available in the child's community, which are likely to vary across states/territories in Australia. These different patterns of ECE participation are apparent in the earlier presented information (Section 2), as well as in tables derived from the three surveys: the NSPCCC (Table C1 on page C1), LSAC (Table C2 on page C1) and AEDI (Table C3 on page C2).

Given the different options of ECE delivery across Australia, when considering locational factors, we would ideally incorporate information about the range of ECE services (the number, type and costs) within the locality of the child, to ascertain to what extent the supply of services affects the uptake of those services. As this local area information was not available for inclusion in these analyses, some state-based analyses have been included as an alternative approach, to model the different ECE systems in place across different jurisdictions. As described above, in the multivariate analyses, a broader indicator of eastern versus other state/territories is used.

Within states/territories of Australia there is also likely to be variability in the ECE options available to families. In Australia, regional variation is often considered in respect to two measures of location—the remoteness of regions (measured in terms of distance to service centres) and the socio-economic status of regions. We focus on these two locational factors in the following subsections.

Remoteness

Differences in ECE participation according to remoteness were discussed in subsection 4.2. Existing research, and consultations in this project, led to the expectation of finding lower levels of ECE participation in the more remote areas of Australia. The data examined here support this. According to each of the data sources examined, as remoteness increased, children were less likely to be in ECE prior to starting their first year of full-time schooling (Table 9).

Table 9 Remoteness of location and percentage of children not participating in early childhood education in the year before full-time schooling, AEDI, NSPCCC and LSAC

	Major cities (%)	Inner regional (%)	Outer regional (%)	Remote or very remote (%)	Australia (%)	Sample size (*N*)
AEDI	10.0	10.7	12.9	19.0	10.8	236,253
NSPCCC	16.0	19.4	23.8	26.6	17.9	1,637
LSAC	6.2	6.6	11.3	12.1	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

In the multivariate analysis, differences between major city areas and remote/very remote areas were statistically significant in AEDI and NSPCCC (see Table 7 on page 27). For example, according to the AEDI, the odds ratio of 0.55 for remote/very remote areas indicates that in these remote areas, the odds of children participating in ECE was 0.55 that of children living in major city areas of Australia. Differences were also apparent when comparing major city areas to inner regional areas and outer regional areas, although the difference between major city areas and inner regional areas was only statistically significant in the AEDI data. In LSAC, the difference in ECE participation was only statistically significant in comparing major city areas to outer regional areas; however, that study is not designed to be representative of families living in remote areas of Australia.

Looking at the AEDI state/territory analyses (Table 8 on page 28), there was some variation across state/territories in regard to the association between remoteness and ECE. In NSW, children living in major city areas were less likely to be in ECE than were children in outer regional areas. In all other states/territories, being in a major city area was associated with relatively high (or at least equal) rates of ECE access when compared to other regions. It was in the three eastern states that the differences for remote areas were most apparent.

It is worth noting that the multivariate analyses take account of other characteristics, including Indigenous status of children, and socio-economic status of regions. As remoteness areas vary in terms of these characteristics, when considering outcomes in particular regions, it is important to be mindful also of these factors, which are discussed separately in this section. Nevertheless, these analyses indicate that, overall, and in most states (but especially the three eastern states), remoteness was associated with lower levels of access to ECE.

Socio-economic status of regions

In our previous discussion of variation in ECE according to the socio-economic status of regions, we noted that some research has found lower rates of ECE participation in areas of greater financial disadvantage. However, we expect that this picture may be quite complex, as in some disadvantaged areas, there may actually be targeted provision of services, including ECE, to help address the needs of low-income families. Further, even within disadvantaged regions we expect there to be considerable heterogeneity of families, and like parents in other regions of Australia, there will be those who ensure their children participate in ECE, whether that ECE is provided locally or outside their region of residence.

For these analyses, the socio-economic status of the region in which children live was available for the AEDI (although not for those living in NT) and for LSAC. These were based on the SEIFA score of the community in AEDI and the Statistical Local Area (SLA) in LSAC, and in both datasets was measured using the SEIFA score of relative disadvantage.

According to the AEDI data, children living in regions with a relatively high socio-economic status were the most likely to participate in ECE in the year prior to their first year of full-time schooling (Table 10).

Table 10 Socio-economic status of region and percentage of children not participating in early childhood education in the year before full-time schooling, AEDI and LSAC

	Most disadvantaged (bottom 20%) (%)	Moderate advantage (middle 60%) (%)	Most advantaged (top 20%) (%)	Australia (%)	Sample size (*N*)
AEDI [a]	14.0	12.3	8.0	10.8	233,412
LSAC [b]	12.0	6.0	3.4	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates. [a] In the AEDI data, the SEIFA classification was not available for NT, so while the Australia total for AEDI includes NT, the NT data are not included in the SEIFA categories. [b] LSAC data are based on the SEIFA index of disadvantage from the 2006 Census, matched to SLAs.

Source: AEDI (2009); LSAC (2008)

In the multivariate analyses (Table 7 on page 27), taking account of some other characteristics of children (including family characteristics for NSPCCC and LSAC; but not for the AEDI, as these characteristics were not available with this dataset), the odds of participating in ECE was higher in the most advantaged regions than in the least advantaged regions (e.g., using AEDI, an odds ratio of 1.24 indicates that the odds of children being in ECE in the most advantaged regions were 1.24 times that of the odds of being in ECE in the least advantaged regions). Interestingly, these analyses showed that compared to the least advantaged regions, the likelihood of participating in ECE was actually lower for children in the middle category of socio-economic disadvantage. This highlights that the association between the socio-economic status of regions and ECE participation is not a straightforward one.

Further, Table 8 (on page 28) shows that it is also important to examine these data by state/territory. According to the AEDI, differences between the lowest and highest socio-economic status regions are especially apparent in NSW, and such differences are not apparent in all states/territories. In fact, in the multivariate analyses of WA, it is children in regions with higher socio-economic status who had the lower rates of participation in ECE prior to their first year of full-time schooling, compared to those in regions of lower socio-economic status. Comparing the lowest and the middle categories of socio-economic status, we see that children living in regions classified as being in the middle have a lower likelihood of participating in ECE if living

in Queensland or Western Australia, but a higher likelihood of participating in ECE if living in NSW or Tasmania. These findings portray a complex and mixed pattern in relation to the association between regional level disadvantage and ECE participation.

Using the LSAC data, at the national level, the overall percentage in ECE did not vary with socio-economic status of the region in the multivariate analysis, after taking account of family-level characteristics. While not statistically significant, the odds ratios were consistent with Table 10 (on page 30), which shows, overall, somewhat higher rates of non-participation in ECE in the more disadvantaged regions.

It should be noted that in analysing socio-economic status of regions using the AEDI data, we were not able to also take account of the socio-economic status of families. To some extent, then, associations attributed here to regional effects may actually represent some effects of family characteristics. The LSAC analyses included information on the socio-economic status of families (for example, income, employment, single parenthood), as well as of the region. This may account for the different findings from the two datasets.

5.4 Socio-economic status of families

In this subsection, consideration is given to a range of variables that capture family socio-economic status. In particular, the focus is on family income, family employment, single versus couple parenthood, and parental education. Analyses of ECE according to these characteristics allows us to consider whether rates of access are lower for children whose parents are on lower incomes, are jobless, are single parents or have relatively low levels of educational attainment. As discussed in subsection 4.2 (on page 16), and as with the above analyses of socio-economic status of regions, we do not expect these associations to be straightforward. This is especially so given that these different measures of socio-economic status are likely to be linked in some way. Therefore, it may be difficult to disentangle which factors have the greatest effects on family decision-making with regard to ECE participation. Overall, though, we expect to find lower rates of participation in ECE in more financially disadvantaged families.

The analyses use LSAC and NSPCCC data, as family characteristics are not available in the AEDI.

Family income

To examine family income and child participation in ECE, the income of each family in LSAC and NSPCCC was ranked from lowest to highest, and then each sample was divided into three groups: those with relatively low incomes (in the bottom 20%), those with relatively high incomes (in the top 20%) , and those who make up the middle 60% of family incomes.

Table 11 shows that a higher percentage of children of lower income families were not in ECE, when compared to families with moderate or higher incomes.

Table 11 Family income and percentage of children not participating in early childhood education in the year before full-time schooling, NSPCCC and LSAC

	Lower incomes (bottom 20%) (%)	Middle incomes (middle 60%) (%)	Higher incomes (top 20%) (%)	Australia (%)	Sample size (*N*)
NSPCCC	23.4	14.3	11.6	17.9	1,637
LSAC	13.5	5.8	2.4	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates. The Australia total includes families with missing information about income.

Source: NSPCCC (2009); LSAC (2008)

The multivariate analyses presented in Table 7 (on page 27) show no significant associations between being in ECE and family income. However, these models also include parental employment and education, which will be strongly associated with parental income. If these

models are re-estimated without parental education and employment, the results show significantly lower levels of access to ECE by children in lower income families (results are shown in Table C4 on page C2).

In later analyses of the LSAC data (Figure 3, on page 45), associations between parental income and participation in ECE are considerably stronger for families in the eastern states, compared with the vast majority of children in other states/territories in ECE, regardless of family income.

Parental employment

As discussed in subsection 5.1 (on page 24), when children were not in early education, parents very often report that this was because a parent is available to care for children. In NSPCCC, 59% of parents of children not in ECE gave a response related to the importance of home care for children or the availability of a parent. When disaggregated by the employment status of the primary carer for children not in early education (usually the mother), these reasons were given by 34% of full-time employed primary carers, 54% of part-time employed primary carers and 63% of not-employed primary carers. This indicates that reasons for child non-participation in ECE do vary according to the primary carer's employment status. Among all families, however, there was a great deal of variability in reasons for non-participation, regardless of parental employment status.

When analysed using NSPCCC and LSAC, there were some clear differences in child participation in ECE according to the employment status of the primary carer. If the primary carer was not employed, children were less likely to be in ECE. This was particularly apparent in the NSPCCC. Differences were statistically significant in the multivariate analysis (Table 7 on page 27) as well as the descriptive analyses (Table 12).

Table 12 Employment status of primary carer and percentage of children not participating in early childhood education in the year before full-time schooling, NSPCCC and LSAC

	Not employed (%)	Employed part-time (%)	Employed full-time (%)	Australia (%)	Sample size (*N*)
NSPCCC	24.3	13.4	8.8	17.9	1,637
LSAC	10.9	3.7	7.1	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); LSAC (2008)

According to the LSAC data, associations between parental employment and rates of access to ECE were most apparent in the eastern states. This is shown in Figure 4 (on page 46), in the later analyses of types of ECE.

Single versus couple parents

We also noted in subsection 4.2 (on page 16), that concerns related to the ECE participation of children in single- rather than couple-parent families were not particularly apparent in the literature or the stakeholder discussions.

In the current analyses of LSAC and NSPCCC, differences in rates of participation in ECE between children of single- and couple-parents also were not apparent in the multivariate analysis. In addition, looking at the overall differences in these samples in Table 13 (on page 33), there was little difference in the percentage of children not in ECE; that is, these data do not provide any evidence that if the primary carer is a single parent, children are at particular risk of missing out on ECE.

Table 13	Primary carer's relationship status and percentage of children not participating in early childhood education in the year before full-time schooling, NSPCCC and LSAC			
	Single parent (%)	Couple parent (%)	Australia (%)	Sample size
	% children not in ECE			N
NSPCCC	17.8	17.9	17.9	2,637
LSAC	9.8	6.7	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); LSAC (2008)

Parental education

A key objective of ECE is to improve children's readiness for school. This is likely to be particularly beneficial for children who are not exposed to early learning activities, such as reading, in the home. One indicator of early learning activities in the home is parental education (Barnett & Yarosz, 2007). Therefore, it is important to consider to what extent children who have parents with relatively low levels of education are accessing ECE.

The association between parental education and early learning in the home is apparent if analysed with the LSAC sample: among those children whose primary carer had incomplete secondary education, 19% were not read to in the past week, compared to 2% not having been read to in the past week when the primary carer had a bachelor degree or higher.

Low parental education is also likely to be strongly associated with other risk factors for children's learning, such as financial disadvantage. In the LSAC data, when the primary carer had incomplete secondary education, 36% of those families had an income within the bottom 20% of the income distribution for families in the sample, compared to 10% of families in which the primary carer had a bachelor degree or higher.

Table 14 shows rates of participation in ECE by the highest level of education achieved by the primary carer, using NSPCCC and LSAC. These analyses show that children of primary carers with lower levels of education were the least likely to be in ECE and this is confirmed in the multivariate analysis.

Table 14	Primary carer's level of education and percentage of children not participating in early childhood education in the year before full-time schooling, NSPCCC and LSAC				
	Incomplete secondary education (%)	Secondary education or diploma/ certificate (%)	Bachelors degree or higher (%)	Australia (%)	Sample size (*N*)
NSPCCC	23.4	18.1	15.8	17.9	2,637
LSAC	12.8	7.2	2.6	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: LSAC (2008); NSPCCC (2009)

In the context of the home learning environment, it is also useful to consider the association between reading in the home and children's participation in ECE. This is possible using LSAC. Of the 213 children in the sample who were not in any form of early childhood education, 16% were not read to in the last week, 28% were read to on 1 or 2 days, 26% were read to on 3, 4 or 5 days and 31% were read to on 6 or 7 days. This compares to the overall sample average of 6% not read to in the last week, 17% read to on 1 or 2 days, 27% read to on 3, 4 or 5 days and 49% read to on 6 or 7 days. It is therefore important to note that many children without formal early childhood education are also likely to not be getting high levels of early learning opportunities at home; that is, their parental care in the year before their first year of full-time schooling will not always be a good substitute for formal ECE in relation to getting the children school-ready.

5.5 Indigenous children and families

The relatively low participation in ECE by Indigenous children is well documented (see subsection 4.2 on page 16). Table 15 shows clear differences in rates of participation in ECE for Indigenous children when compared to non-Indigenous children. For Indigenous children, rates of non-participation in ECE were 21% in the AEDI, 26% in LSAC, and 31% in the NSPCCC. For non-Indigenous children, rates of non-participation were much lower, at 10% (AEDI), 6% (LSAC) and 18% (NSPCCC).

Table 15 Indigenous status and percentage of children not participating in early childhood education in the year before full-time schooling, AEDI, NSPCCC and LSAC

	Not Indigenous (%)	Indigenous (%)	Australia (%)	Sample size (*N*)
AEDI	10.3	21.0	10.8	236,284
NSPCCC	17.6	30.6	17.9	1,637
LSAC	6.1	26.2	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

The multivariate analysis of preschool access (Table 7 on page 27) shows that, holding other characteristics of children and families constant, Indigenous children had lower rates of preschool enrolment when analysed using AEDI and LSAC. Statistically significant differences were not observed in NSPCCC, even though Table 15 shows relatively high levels of non-participation among Indigenous children for this sample. (The non-significance may be related to the small number of Indigenous children in the sample.)

In the state/territory-specific multivariate analyses of AEDI (Table 8 on page 28), Indigenous children had lower rates of participation in ECE in all but two states—Tasmania and ACT.

The overall lower rates of participation by Indigenous children are consistent with the findings of Biddle (2007), who analysed preschool participation of 3–5 year old children using the 2001 Australian Census. He found that within this broader age group, after taking account of a range of family and child characteristics, Indigenous children had lower participation rates in preschool. Biddle undertook additional analyses by estimating models for preschool participation separately within the Indigenous population and within the non-Indigenous population. This allowed comparison of the two models to see whether predictors of preschool participation (such as lower parental education or remoteness) had the same effect on participation for Indigenous and non-Indigenous children. Biddle found that living in a remote area, and living in a household with low income and lower levels of education in the family had a stronger negative effect on children's participation in preschool for Indigenous compared to non-Indigenous children.

This approach has been replicated here using the AEDI, with the multivariate analyses of ECE participation done separately for Indigenous and for non-Indigenous children. Table 16 (on page 35) shows that a number of the factors that explain lower rates of participation in ECE by non-Indigenous children are not statistically significant for Indigenous children. Specifically, among Indigenous children, preschool participation did not vary according to whether English was a second language nor according to whether the child was identified as having special needs; however, these characteristics *were* related to lower rates of participation among non-Indigenous children. Among Indigenous children, those in remote parts of Australia had relatively low rates of enrolment in ECE, as was also true for non-Indigenous children; that is, lower rates of participation were apparent for Indigenous children, especially Indigenous children in remote areas. There were also state-level differences that were consistent with findings for non-Indigenous children. The SEIFA results were somewhat difficult to interpret for Indigenous children, as the SEIFA classification was not available for those living in the NT, and Indigenous children are over-represented in this state.

Table 16 Multivariate analyses of which Indigenous and non-Indigenous children are in the year before full-time schooling, AEDI		
	Non-Indigenous (*OR*)	Indigenous (*OR*)
Eastern states (NSW, Vic., Qld) (ref. = All others)	0.79**	0.61***
Locational factors		
Remoteness (ref. = Major cities)	1.00	1.00
Inner regional areas	0.89***	1.08
Outer regional areas	0.74***	0.96
Remote or very remote areas	0.45***	0.64***
Socio-economic status of region (ref. = Most disadvantaged, bottom 20%)	1.00	1.00
Middle advantage, middle 60%	0.94	0.79**
Most advantaged, top 20%	1.32***	0.94
SEIFA not available (Northern Territory)	1.88***	0.91
Non–English speaking background	0.42***	1.00
Special health care needs	0.69***	0.91
Constant	12.46***	6.97***
Sample size	226,016	10,190

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009)

5.6 Non–English speaking background families

This section examines the extent to which children's enrolment in ECE varies when they are from a non–English speaking background. For this study, whether or not the child is NESB provides the best indicator available for cultural and linguistic diversity. The actual indicator of NESB in the report varies according to the source of the data. The AEDI used information on whether children had English as a second language. LSAC used information on the main language the children spoke at home. NSPCCC used information on the main language the survey respondent spoke at home, since similar information was not collected in respect to the children. Note that this only captures ethnicity in very broad terms, which may not be sufficient for examining issues for children from particular cultural or ethnic groups—that would require a more detailed study (Wise & Da Silva, 2007).

Table 17 shows some evidence of NESB children having somewhat lower rates of participation in ECE. This is most apparent in the AEDI data, but somewhat lower rates of participation in ECE are also apparent for these children in LSAC and NSPCCC.

Table 17 NESB status and percentage of children not participating in early childhood education in the year before full-time schooling, AEDI, NSPCCC and LSAC				
	English-speaking (%)	NESB (%)	Australia (%)	Sample size (*N*)
AEDI	9.6	19.0	10.8	236,284
NSPCCC	17.8	20.5	17.9	1,637
LSAC	6.5	10.4	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

The multivariate analyses (Table 7 on page 27) found that, holding other characteristics of children and families constant, NESB children had relatively low rates of ECE participation when analysed using AEDI, but not using NSPCCC and LSAC. In the state/territory-specific models of AEDI (Table 8 on page 28), NESB children had lower ECE participation in each state/territory.

Additional models were estimated to look at whether the factors predicting ECE participation differed for children according to whether they were from a non-English speaking background (Table 18). The model estimated specifically for NESB children lacked statistical significance for the characteristics of children being Indigenous or having special needs. These characteristics were only statistically significant for children who were not NESB.

Table 18 Multivariate analyses of which NESB and ESB children are in early childhood education in the year before full-time schooling, AEDI

	NESB (*OR*)	ESB (*OR*)
Eastern states (NSW, Vic., Qld) (ref. = All others)	0.73***	0.78***
Locational factors		
Remoteness (ref. = Major cities)	1.00	1.00
Inner regional areas	0.91	0.90***
Outer regional areas	0.81***	0.76***
Remote or very remote areas	0.76***	0.46***
Socio-economic status of region (ref. = Most disadvantaged, bottom 20%)	1.00	1.00
Middle advantage, middle 60%	0.94	0.90**
Most advantaged, top 20%	1.20***	1.29***
SEIFA not available (Northern Territory)	0.96	1.88***
Indigenous child	0.96	0.46***
Special health care needs	0.99	0.64***
Constant	5.63***	12.91***
Sample size	28,817	207,389

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009)

5.7 Children with disabilities or special health care needs

The next analyses examine differences in participation in ECE for children with disabilities or special health care needs. The identification of children in this category varied across sources. The AEDI used the indicator of children having special needs, LSAC uses the indicator of children having special health care needs and the NSPCCC did not include an indicator of health or disability.

According to the AEDI, children with special needs were somewhat less likely than other children to have been in ECE prior to starting their first year of full-time schooling (Table 19). This indicator was statistically significant in the multivariate analysis (Table 7 on page 27), although in the state/territory analyses (Table 8 on page 28), it was not statistically significant for SA, NT and ACT. This difference was not reflected in the LSAC data. The different findings from each of these sources may reflect the different indicator variables used to identify children with special (health care) needs.

Table 19 Special needs/health care status and percentage of children not participating in early childhood education in the year before full-time schooling, AEDI and LSAC

	No special (health care) needs (%)	Has special (health care) needs (%)	Australia (%)	Sample size (*N*)
AEDI	10.6	15.0	10.8	236,284
LSAC	7.4	5.4	7.1	3,005

Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009); LSAC (2008)

As with other analyses, within AEDI and LSAC, children with special needs are likely to be a very diverse group in relation to the nature and severity of their health care needs. To fully understand the issues for ECE participation for these children, such characteristics would need to be examined. It is beyond the scope of this study to look into such details more comprehensively.

5.8 Summary

Section 5 has presented analyses of children's participation in ECE to help understand which children are missing out on ECE, and to help identify particular barriers to these children's inclusion in ECE.

The reports by parents about the non-participation by children in ECE provided some indication that a small proportion of children are missing out because of barriers—or perceived barriers—in regard to cost, availability, accessibility or appropriateness. However, parents of non-attending children were more likely to say their children were not in ECE because of reasons related to the availability of a parent to care for children, or related to a belief in parental care of children. While this suggests some degree of choice by these parents, it warrants further attention, preferably with a different research methodology that would allow the decision-making process to be explored more fully. This would be particularly useful in regard to more disadvantaged and vulnerable families.

The analyses presented here confirm the expectations of the stakeholders and also the findings reported in the literature, that children missing out on ECE are more often represented among disadvantaged families, and among children who are perhaps in greatest need of ECE in respect of preparing children for school. The groups of children who stood out in these analyses as being less likely to be participating in ECE were Indigenous children and children from NESB families. Children from socio-economically disadvantaged families were also less likely to participate in ECE than those from socio-economically advantaged families. Children living in remote areas had the lowest levels of participation in ECE, compared to those living in major city areas, and some variation was also apparent according to the disadvantage of regions. However, the findings with regard to geographic location were not apparent when the socio-economic status of families was also taken into account.

The patterns of ECE participation for different groups of children appear to vary across the states/territories of Australia, which may reflect the different systems of ECE delivery. In particular, more variation in rates of ECE participation was evident in the eastern states.

These analyses were based on three main datasets—the AEDI, NSPCCC and LSAC. Within each dataset there were some measurement issues, which meant that to analyse ECE participation, the most reliable approach was to consider any participation in preschool (kindergarten) or LDC to be ECE. While each dataset had its own particular set of issues (as documented in Appendix B), undertaking similar analyses with these three sources of information has provided more support to the findings, especially those that consistently arose from all three.

Most of the findings presented here were consistent with expectations, although some suggest that further research may be useful in helping to disentangle how different factors affect family decision-making regarding child participation in ECE. In particular, more research on factors related to family income, employment and parental education levels, and how they intersect with decisions about ECE would help in the understanding of the issues of more vulnerable families.

Section 6 extends the descriptive analyses presented in this section to look more closely at children's participation in the different types of ECE, and how this varies by some of the characteristics already examined here.

6 Types of early childhood education: Variation and parental decision-making

This section explores the types of ECE that children attend, how these types of ECE vary across the range of factors examined in Section 5, and also, some reports by parents regarding preferences and reasons associated with their choice of ECE provider. The purpose of this is to help us understand how these are linked, overall, to differences in levels of access to ECE.

Earlier sections of this report have highlighted the complexity of the Australian system of ECE. While the analyses here cannot represent this complexity fully, given the data limitations (in terms of sample sizes as well as the availability of reliable information on types of ECE), these analyses specifically consider to what extent children participate in ECE through preschools or through LDCs, or a combination of these. Some state-level analyses are included, given that very significant state-level differences exist in relation to the delivery of ECE across Australia (see Section 2 in particular).

As in Section 5, before presenting the information on characteristics of families and regions by type of ECE, the first subsection provides some analyses of information relating to parental decision-making and type of ECE provider, which may contribute to understanding the findings presented later in this section.

6.1 Reasons for choosing types of early childhood education provider

Many factors may affect parents' decisions about ECE or child care providers. This section reports on information provided in LSAC (B cohort, Wave 3), NSPCCC and CEaCS, as these data sources provide some insights into the decision-making process regarding ECE participation. However, given the survey collection methodology of each (which did not allow for detailed probing of this process), they are unlikely to give the depth of information that could be gained with qualitative research.

Table 20 (on page 40) shows LSAC data on parents' responses when asked for their main reason for their child attending child care or preschool ("What is the main reason the Study Child is regularly attending [main program]?"). Note this information refers to the main program the child attends. "Good for child's social development/to mix with other children" was the most common reason given overall, and the most common reason for those whose child was in preschool. Parents' work or study was more frequently cited as a reason for those children in child care only and, to a lesser extent, for children in a preschool program in LDC. When the preschool was attached to a school, parents were somewhat more likely to say that "good for child's intellectual or language development" was the main reason for their attendance in that program, compared to children in other programs.

Parents in the NSPCCC were asked why they had chosen their particular main care/ECE provider for children in the year before full-time schooling.[6] Table 21 (on page 40) shows the range of reasons offered. The most commonly cited reasons relate to the qualities of the staff (friendly and caring) and the physical attributes of the centre. Significant proportions also referred to

[6] The question was "What sort of things did you think were important about the specific provider or centre when choosing main care/preschool for child?".

Table 20 Main reason for choosing program for children in early childhood education in the year before full-time schooling, by program type, parents' reports, LSAC

	Child care only (%)	Preschool in LDC (%)	Preschool in school (%)	Preschool not in school (%)	Total (%)
Parent's work or study commitments	68.5	46.5	3.2	4.8	22.5
Good for child's social development/ to mix with other children	25.0	43.4	54.6	74.7	56.7
Good for child's intellectual or language development	5.6	7.8	36.9	17.7	17.8
Total	100.0	100.0	100.0	100.0	100.0
Sample size	464	474	596	1,271	2,805

Note: Other response categories not shown were "Parent's sport, shopping, social or community activities" (< 1%), "Give parent a break or time alone" (< 1%) and "Other" (2%). Includes children not yet in school whose parents report they are to start full-time schooling next year.

Source: LSAC (2008)

Table 21 Reasons for choosing main care/preschool provider for children in early childhood education in the year before full-time schooling, by program type, parents' reports, NSPCCC

	LDC only (%)	Preschool in LDC (%)	Non-govern-ment preschool (%)	Govern-ment preschool (%)	Total (%)
Friendly/caring staff	54.3	43.1	42.4	37.4	41.9
Physical attributes of the centre	51.4	48.5	31.7	31.4	38.3
Quality/reputation of care	25.3	28.6	31.5	32.5	30.5
Location of the centre	27.9	25.2	24.6	37.7	29.7
Having a formal structure or early learning program	19.9	26.7	35.7	27.6	29.0
Good feeling in the centre	15.3	14.5	20.4	18.3	17.4
Staff qualifications	17.0	11.8	7.5	11.0	10.8
Affiliation of centre	2.5	9.0	14.1	5.4	8.6
Staff-to-child ratio	10.3	10.6	9.5	5.6	8.6
Staff experience	4.1	6.5	6.8	7.8	6.8
Social interaction with other children	3.8	3.4	7.4	6.5	5.6
Opening hours	2.1	6.3	7.4	2.7	5.0
Cost	5.4	5.1	3.5	4.4	4.5
Support for child's special needs or requirements	4.3	2.1	3.8	4.0	3.4
Childs happiness/progress/comfort	3.2	2.9	2.9	1.0	2.3
Availability—only choice available	0.3	0.6	1.5	3.0	1.7
Children's activities offered by centre	3.7	0.9	1.8	1.5	1.6
Communication between centre and parents	–	2.3	0.6	0.7	1.1
None of these	2.9	0.4	0.4	0.6	0.7
Other	17.3	9.9	9.8	7.5	9.7
Sample size	91	289	311	561	1,252

Note: Respondents could give multiple responses, so percentages add to more than 100.

Source: NSPCCC (2009)

the quality or reputation of the centre, the location of the centre or the provision of a formal structure or learning program. Various other reasons were also selected.

There were some differences in reported reasons according to the type of provider; for example, for children in LDC without a preschool program, friendly/caring staff was referred to more often than for other care types. For government preschools, the location of the centre was more commonly reported compared to other care types. Having a formal structure of early learning program was most often cited by parents of children in non-government preschools than in other care types.

Similar information was sought in the CEaCS from parents of children in preschool or in LDC, although the range of reasons captured was different to those in the NSPCCC. Table 22 shows that location was important, as was the quality or reputation of the educational program or the care. Simple "availability" was also often cited.

Table 22 Main reason for choosing preschool or LDC for 3–5 year old children not yet in school, parents' reports, CEaCS

	Preschool (%)	LDC (%)
Close to home	33.4	21.7
Quality/reputation of educational program	23.3	16.8
Quality/reputation of care	12.8	23.6
Availability	11.7	16.8
Child's brother/sister attends/attended	4.4	2.6
Close to child's/brother's/sister's school	3.1	1.4
Cost	1.7	3.0
Close to school	1.3	0.6
Close to own/spouse's/partner's work	0.9	2.6
Hours of operation	0.4	1.7
On the way to own/spouse's/partner's work	0.2	1.1
Other	6.8	8.1
Sample size	649	532

Source: CEaCS (2008)

Being close to home and the quality/reputation of the educational program were more often given as the main reason for children in preschool compared to children in LDC, while for LDC, the quality of the care and availability were more often cited as the main reason, compared to those in preschool.

The above analyses show that there are somewhat different reasons for choosing a particular type of ECE across the different providers. We can examine this more closely, in relation to parents' reports of why they used preschool in a LDC centre for their child, as opposed to a dedicated preschool (using NSPCCC, see Table 23 on page 42). The most common reason was that this option provided more flexible hours. After this, there were various reasons that related to the convenience of a preschool in LDC. Overall, 13% reported that this was the only option available.

In the CEaCS, for 3–5 year olds who were not in school or preschool but were in LDC, parents were asked if they preferred their child to be in preschool. For a significant proportion, the answer could not be determined (39%), while 44% would not have preferred preschool, leaving 17% who stated that they would have preferred preschool. Among those who said they would have preferred preschool (n = 82), the most commonly cited reason was the quality or reputation of the educational program (59%), followed by cost (23%).

Looking from the other perspective, in CEaCS, parents of children who attended a standalone preschool were asked whether they would have preferred their child to attend LDC. Of the 3–5 year olds who were in preschool and not already attending LDC, just 5% said that they would have preferred LDC. While this applied to just a small number of respondents (n = 29), the reason for this preference was most often said to be related to the hours of operation (40% of these respondents).

Table 23 Reasons for using preschool in LDC rather than dedicated preschool, parents' reports, children in preschool program in LDC in the year before full-time schooling, NSPCCC	
	% of parents
Provides more flexible hours	32.0
Already attending LDC centre	16.2
Familiarity/child has friends or siblings there	15.1
Convenience/cost	13.9
No availability—no other option	13.0
Prefer programs/activities	7.5
Child not old enough	1.4
Other	26.1
Sample size	268

Note: Respondents could give multiple responses, so percentages add to more than 100. Reasons were collected in open-ended questions and then coded later in survey processing.

Source: NSPCCC (2009)

6.2 Types of early childhood education and regional and family characteristics

Section 5 explored how, in aggregate, ECE participation varied with different regional, family and child characteristics. Here, we examine whether the type of ECE varied with regional and family characteristics. Our goal with these analyses is to look for under-representation in specific types of ECE, which may indicate the presence of barriers to access. We have not considered child characteristics (Indigenous status, NESB and health status), as here our interest is related more to factors of a geographic and socio-economic nature. Tables pertaining to those child characteristics are provided in Appendix C.

In the analyses in Section 5, data were sourced from LSAC, NSPCCC and AEDI. In this section, for simplicity of presentation, the analyses are restricted to one data source at a time, starting with national estimates of the percentage of children in each type of ECE. The AEDI is used in preference to the other sources, given the much larger sample size in this collection; however, AEDI cannot be used to examine family characteristics (as these details were not available in the AEDI) and so for those analyses LSAC data are used instead. LSAC was selected instead of NSPCCC because of the larger sample size of LSAC. Appendix C includes tables for those sources not included in this section.

As shown in Table 6 (on page 12), the classification of ECE type varies somewhat according to the source of data, given underlying differences in collection methodologies. For those in ECE, we identify in this section those who were in preschool only (that is, a standalone preschool that is not also an LDC provider); those participating in both preschool and LDC (that is, in two different programs); and those in LDC only. For ease of presentation, we have not made the distinction between those in LDC with and without a preschool program.

Estimates are provided initially at the national level. Analyses of the AEDI also include figures disaggregated by state/territory. Analyses of LSAC data include comparisons of the eastern states to other states. This is to allow us to consider the effects on participation of the two broad models of provision of ECE in Australia.

Remoteness

Earlier it was shown that as remoteness increases, children are less likely to be in ECE prior to starting their first year of full-time schooling. Table 24 (on page 43) shows that what appears to vary the most according to remoteness is the proportion in attendance at LDC, which declines with remoteness. These patterns are also evident in the LSAC and NSPCCC data (see Appendix C).

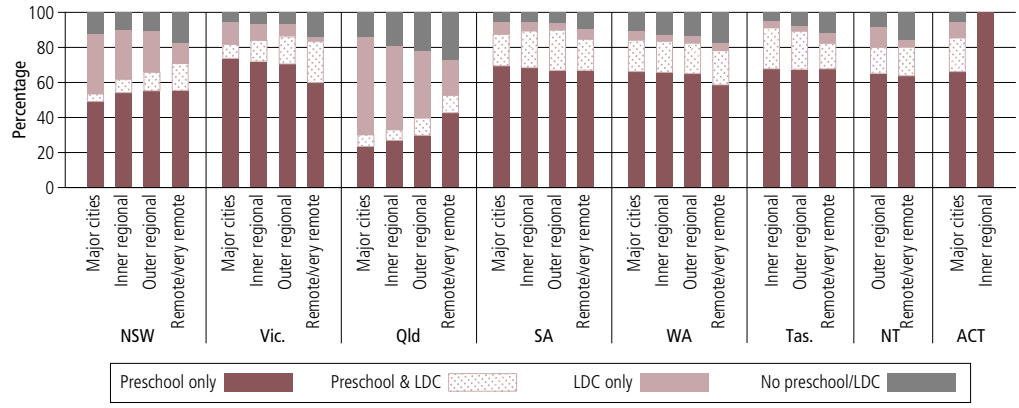
Table 24 Remoteness and type of early childhood education in the year before full-time schooling, AEDI

	Major cities (%)	Inner regional areas (%)	Outer regional areas (%)	Remote or very remote areas (%)	Australia (%)
In ECE					
Preschool only	54.3	55.3	52.8	55.2	54.4
Preschool and LDC	8.9	11.4	14.1	16.1	10.2
LDC only	26.7	22.7	20.2	9.6	34.8
Not in ECE	10.0	10.7	12.9	19.0	10.8
Total	100.0	100.0	100.0	100.0	100.0
Sample size	156,006	48,853	23,341	8,053	236,253

Note: Refer to Appendix B for important notes regarding these estimates. Chi-square (6) > 2,000, $p = .000$ (excluding those with no ECE). This test shows whether there was a statistically significant difference in the ECE type distribution by remoteness, but does not provide information about which specific percentages were different.

Source: AEDI (2009)

The state/territory information in Figure 1 shows that the effects of remoteness are apparent in most states/territories of Australia, but more so in NSW and Queensland. In Queensland, there is a higher rate of participation in only preschools in the more remote areas, which is a pattern not observed in other states/territories.



Note: Refer to Appendix B for important notes regarding these estimates.

Source: AEDI (2009)

Figure 1 Remoteness and type of early childhood education in the year before full-time schooling, by state/territory, AEDI

In those states/territories in which ECE is often provided through LDC, there may be some barriers, then, to ECE participation for those in more remote areas. Future research will be needed to determine whether this is related to the supply of LDCs in more regional areas, or whether it is related to issues related to the take-up of places (perhaps associated with issues of cost or affordability).

Socio-economic status of regions

Overall, children living in regions with a relatively high socio-economic status were the most likely to participate in ECE in the year prior to the first year of full-time schooling. Looking at these data on types of ECE at the national level (Table 25 on page 44), there were no particularly large differences in the distribution of types of ECE across regional socio-economic status. It does appear, though, that children in the most disadvantaged regions were less likely than children in other regions to be in only LDC, and they were somewhat more likely to

be in both LDC and preschool. However, this finding was not so apparent in the LSAC data (presented in Appendix C).

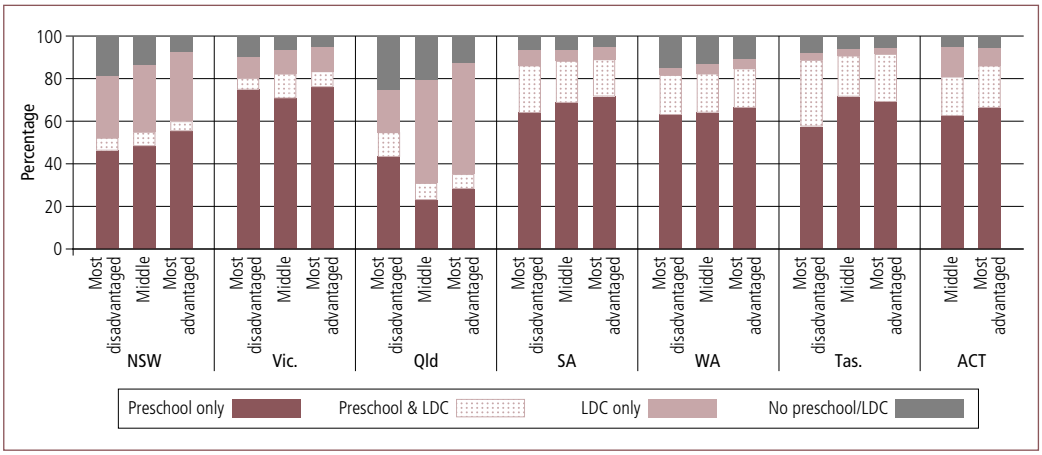
Table 25 Socio-economic status of region and type of early childhood education in the year before full-time schooling, AEDI

	Most disadvantaged (bottom 20%) (%)	Moderate advantage (middle 60%) (%)	Most advantaged (top 20%) (%)	Australia (%)
In ECE				
Preschool only	55.7	52.4	56.9	54.3
Preschool and LDC	13.7	10.4	9.2	10.1
LDC only	16.6	24.9	25.9	24.9
Not in ECE	14.0	12.3	8.0	10.8
Total	100.0	100.0	100.0	100.0
Sample size	12,706	131,241	89,465	233,412

Note: Refer to Appendix B for important notes regarding these estimates. The Australia total includes NT, but the NT data are not included in the SEIFA categories, as this classification was not available for NT. Chi-square (4) = 722, p = .000 (excluding those with no ECE). This test shows whether there was a statistically significant difference in the ECE type distribution by SEIFA, but does not provide information about which specific percentages were different.

Source: AEDI (2009)

Using the AEDI, state/territory differences in regard to associations between socio-economic status of regions and ECE type are apparent (Figure 2). The greatest difference in the types of ECE attended according to the socio-economic status of the region was in Queensland, where the highest proportion attending only preschool was in the lowest socio-economic regions. Compared to other socio-economic regions in Queensland, a much smaller percentage in the lowest socio-economic regions was in LDC. While this suggests some barriers to ECE may exist through the lower take-up of LDC places, especially for those in disadvantaged areas of Queensland, this may be too simplistic an interpretation. These regional differences are also a factor of the family characteristics in these regions. Again, focused studies on parental decision-making may be needed to fully understand the way in which regional disadvantage may flow through to choice of type of ECE.



Note: Refer to Appendix B for important notes regarding these estimates. SEIFA data were not available for NT. Most disadvantaged = bottom 20% of the distribution; middle = middle 60%; most advantaged = top 20%.

Source: AEDI (2009)

Figure 2 Socio-economic status of region and type of early childhood education in the year before full-time schooling, by state, AEDI

Socio-economic status of families

To examine the types of ECE according to the socio-economic status of families, this section includes only information about family income and parental employment. While in Section 5 parental education and single- versus couple-parent families were also examined, here there were no strong reasons to expect that types of ECE would vary by these characteristics. Tables for those variables are shown in Appendix C.

Table 26 shows how ECE types vary according to relative family income. As already discussed in Section 5, the clearest pattern shows that non-participation in ECE was higher in families on relatively low incomes. At the national level, using the LSAC data, there was not a statistically significant association between types of ECE and family income.

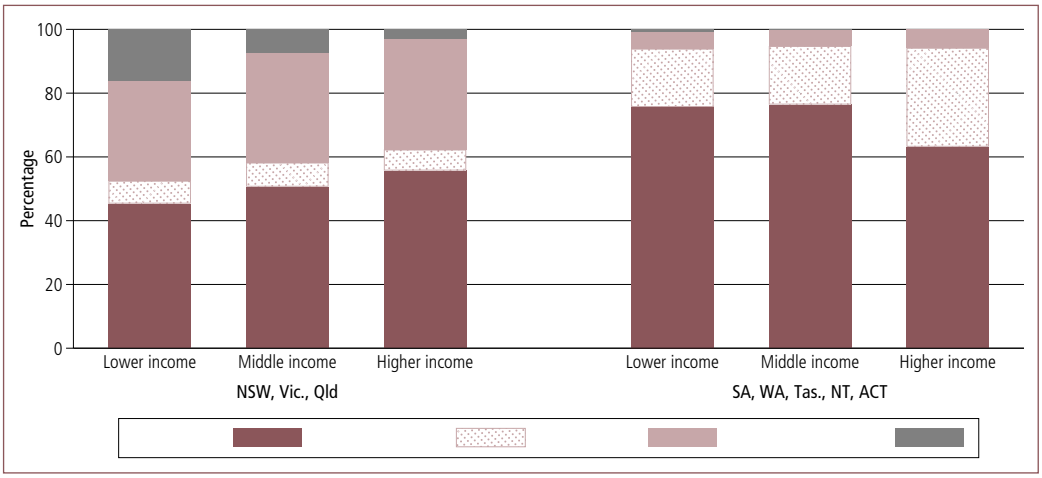
Table 26 Family income and type of early childhood education in year prior to full-time schooling, LSAC

	Lower incomes (bottom 20%) (%)	Middle incomes (middle 60%) (%)	Higher incomes (top 20%) (%)	Australia (%)
In ECE				
Preschool only	50.7	56.0	57.3	54.8
Preschool and LDC	9.1	9.8	11.9	9.6
LDC only	26.7	28.4	28.4	28.5
Not in ECE	13.5	5.8	2.4	7.1
Total	100.0	100.0	100.0	100.0
Sample size	552	1,665	542	3,005

Note: Refer to Appendix B for important notes regarding these estimates. The Australia total includes families with missing information about income. Chi-square (6) = 7.67, p = .26 (excluding those with no ECE). This test shows whether there was a statistically significant difference in the ECE type distribution by income.

Source: LSAC (2008)

In the eastern states (Figure 3), most differences by family income related to the percentage not in ECE. But in the other state/territories, in higher income families, children were more likely to be participating in a preschool and LDC. This may simply reflect an association between income and employment, with families needing to use LDC when parents spend more time in paid work.[7]



Note: Refer to Appendix B for important notes regarding these estimates. Lower income = bottom 20% of the distribution; middle income = middle 60%; higher income = top 20%.

Source: LSAC (2008)

Figure 3 Family income and type of early childhood education in the year before full-time schooling, by broad state grouping, LSAC

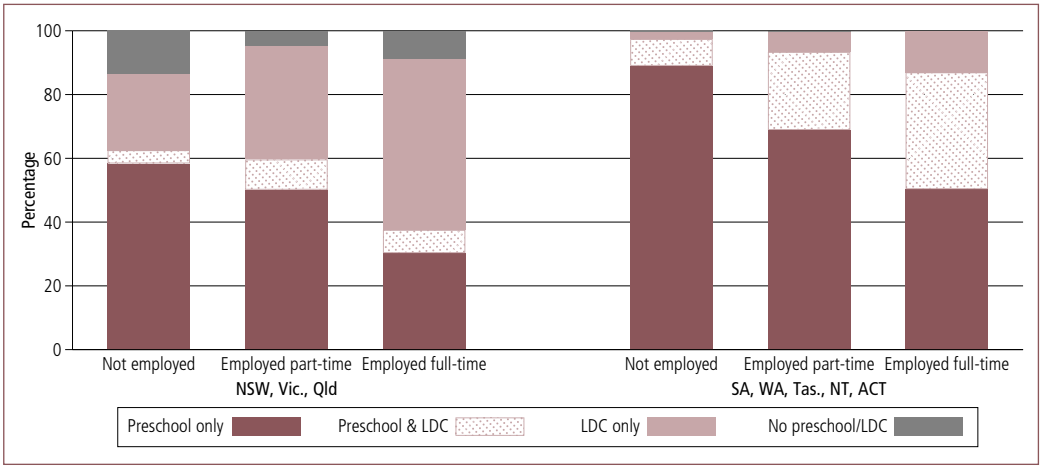
[7] The NSPCCC data show that, at the national level, participation rates in LDC (on its own or combined with preschool) were lowest in the lower income families (Table C7 on page C4).

Parental employment

As discussed in Section 5, employment participation by the primary carer is expected to have marked associations with children's participation in ECE, given that employed parents are likely to need some form of care for their children—which may be through LDC or preschool—while they are in employment.

For parents who work relatively long hours, preschool programs may not provide the care needed to fit with the demands of employment, given that preschool often does not cover a full work day, is only for one or two days a week, and may vary from week to week. As a result, employed parents—especially those who are full-time employed—are expected to seek LDC for children instead of preschool (see Baxter, Gray, Alexander, Strazdins, & Bittman, 2007). Consistent with this, we saw earlier (in Table 20 on page 40) that the reasons given by parents for children's participation in ECE varied according to whether the ECE was delivered through LDC or a preschool, with work demands being a more likely reason for the former.

Analyses presented in Section 5 showed that if the primary carer was not employed, children were less likely to be in LDC or preschool. This was particularly noticeable for families in the broad state group that comprises NSW, Victoria and Queensland (Figure 4). Table 27 shows that, at the national level, children with a not-employed primary carer were more likely to be



Note: Refer to Appendix B for important notes regarding these estimates.

Source: LSAC (2008)

Figure 4 Primary carer employment and type of early childhood education in the year before full-time schooling, by broad state grouping, LSAC

Table 27 Primary carer employment and type of early childhood education in the year before full-time schooling, LSAC

	Primary carer not employed (%)	Primary carer employed part-time (%)	Primary carer employed full-time (%)	Australia (%)
In ECE				
Preschool only	64.4	54.1	33.8	54.8
Preschool plus LDC	5.0	12.7	12.5	9.6
LDC only	19.7	29.5	46.6	28.5
Not in ECE	10.9	3.7	7.1	7.1
Total	100.0	100.0	100.0	100.0
Sample size	1,071	1,445	489	3,005

Note: Refer to Appendix B for important notes regarding these estimates. Chi-square (4) = 196.2, p = .000 (excluding those with no ECE). This test shows whether there was a statistically significant difference in the ECE type distribution by employment status, but does not provide information about which specific percentages were different.

Source: LSAC (2008)

in preschool alone than were children with part-time or full-time employed primary carers. Children with full-time employed primary carers were the most likely to be in LDC.[8]

Figure 4 (on page 46) shows the effects of the different systems of ECE according to the broad state groupings. In the grouping of SA, WA, Tas., NT and ACT, there was a greater use of preschool alone, even among children with full-time employed primary carers. However, significant proportions of children attended a combination of preschool and LDC, especially when the primary carer was employed part-time or full-time. This is consistent with the finding, discussed earlier, related to higher income families having a higher proportion of children in LDC in these states/territories. In contrast, in the NSW, Vic., Qld group, more children attended LDC overall, and this was especially apparent when the primary carer was employed.

These findings draw attention to the fact that choice of ECE may be affected not only by the delivery system that predominates in the area, or by economic factors, but also by the practicality of how different types of ECE fit around parental work arrangements.

6.3 Summary

This section has taken a detailed look at children's participation in different types of ECE in the year before full-time schooling. The aim was to provide some insights into the decision-making that goes into the choice of the type of ECE children attend, and also into those factors that might be related to lower levels of participation in particular types of ECE.

The analyses of parental decision-making and types of ECE provide some insights into the various factors parents take into account when choosing ECE for their child. While some clear patterns emerge from some of these data, they need to be interpreted cautiously. For example, these analyses show that for children attending LDC only, the most common reason that parents provided for this was to accommodate work and study commitments. Where children were attending a preschool-only program, however, the most common reasons provided focused on social and intellectual development. However, this does not mean that parents choosing only LDC don't value their child's development—it may be that they are also taking these factors into account when choosing ECE for their child.

The analyses of how type of ECE varied with regional and family socio-economic characteristics portrayed an equally complex picture to those relating to decision-making factors. In particular, parental employment is an important factor explaining how ECE type varies across families, with greater use of LDC occurring when parents were employed for longer hours. This was the clearest association of the regional and family factors explored here, and highlights that family needs for child care are likely to influence their choice of type of ECE. This fits with many of the stakeholder discussions in which departmental officers acknowledged that the hours of many preschool-only programs could be a barrier for parents juggling employment and ECE.

In addition, the relationship between regional and family socio-economic characteristics and type of ECE used by families varied across jurisdictions.

The variation in types of ECE clearly reflected the state/territory differences in ECE delivery, showing up the greater reliance on LDC in the larger eastern states than in other states. In all states/territories, though, there was a significant proportion of children in both preschool and LDC.

Like the findings from Section 5 about non-participation in ECE of any kind, a more in-depth examination of how decisions about using different types of ECE are made by parents, and the factors (including preferences, and regional and family socio-economic characteristics) that underlie them, would provide a greater understanding on these matters, especially to the extent that parents may be constrained in their options for ECE. Previous qualitative research in relation to parents' employment decision-making and beliefs about child care has found that these decisions are multifaceted and complex (Hand, 2005; Hand & Hughes, 2004) and are a mixture of beliefs about what is best for their children, as well as the opportunities and constraints available to them to enact their preferences. A similar approach in investigating decisions about accessing ECE and the types chosen may also provide valuable insights into the complexity of

[8] These findings were also apparent in the NSPCCC data (Table C8 on page C4).

such decisions; for example, by taking account of the typical delivery method for ECE that is relevant to individual families, specific local area factors in relation to the availability of different options, and whether families with particular characteristics feel constrained in different ways by the ECE options available to them (particularly in relation to cost and availability).

7 Summary and conclusion

The Access to Early Childhood Education project has examined ECE in the context of the NP ECE, in order to explore the meaning of "access" to ECE, the measurement of "access" and whether (and why) some children, in the year prior to full-time schooling, may be missing out on ECE. The project has drawn on multiple sources—utilising information from the Australian and international literatures, combined with accounts from key stakeholders and national datasets—to explore these issues in the context of the Australian ECE system.

The complexity and diversity of settings within which ECE is offered across Australia is an important factor in understanding the findings of the Access to Early Childhood Education project. ECE programs in Australia tend to be delivered along two broad models of ECE—one a predominantly government model and the other a predominantly non-government model. In the former, it is more typical for ECE to be accessed through standalone preschools or preschools attached to schools. Preschool is often free (with a voluntary levy) under this model. In the latter, there is more diversity in the arrangements, with LDC also playing a significant role, and costs tending to be higher (Urbis, 2011). The eastern states of NSW, Victoria and Queensland generally are more closely aligned with the non-government model, with the other states/territories looking more like the government model. Understanding the different ways in which ECE is delivered across the states and territories is a key factor in understanding the complexities of the meanings and measurement of access in the Australian context.

7.1 The meaning of "access" to early childhood education

The research clearly shows that "access" to ECE encompasses more than just the number or proportion of children enrolled in ECE. In this project, the multidimensionality of ECE was apparent in the stakeholder discussions and in the Australian as well as international literature.

The stakeholder discussions identified the following components of "access":

- creating opportunities for children to participate in ECE programs;
- providing enough time within the programs for children to learn; and
- allowing children to experience the program (and its potential benefits) fully.

That is, being able to provide a place for children to enrol in ECE was the first step toward access. Whether availability of places translates into enrolment in places is likely to depend on the characteristics of the services that offer those places and on the preferences of parents of children who are eligible to attend these services. In particular, the Australian literature (reviewed in this report) and the international literature (as summarised by Moss, Appendix A) have identified factors such as cost, quality, opening hours, physical location and the responsiveness of services to meeting diverse child and family needs as being important to families.

The aspect of time, when raised by stakeholders as one part of the "access" concept, may to some extent reflect that under the NP ECE, access to ECE involves providing programs to children for 15 hours per week.

Beyond the idea of children simply being present at a service for enough time in the year prior to full-time schooling, there was also acknowledgement in both the stakeholder discussions and the literature that access also needs to be considered in terms of the experience of attending the program being of benefit to children. That is, that the program is of high quality, accessible and delivered in such a way that the child is able to fully experience the potential benefits of ECE.

The stakeholder discussions and literature, in addressing issues of access, also focused on the non-participation in ECE by some children. These issues included concerns regarding the enrolment and then continuing (and regular) attendance by some children—often those in more vulnerable families or communities. We will return to this further below.

In summary, this component of the project found that "access" to ECE is multidimensional, both conceptually and in practice, which supports the broader goals of NP ECE. This, of course, provides challenges when attempting to measure a more completely defined concept, as discussed in the next subsection.

7.2 Measuring "access" to early childhood education

Throughout this report, a number of difficulties in measuring access to ECE have been discussed. Broadly, there were two key issues. One related to the difficulties of measuring "access" using a relatively simple measure of participation, as has been done in this report. The other related to whether or not, and how, to incorporate the multidimensionality of "access" into the measurement.

Access measured by participation or enrolment

Several difficulties in measuring access to ECE in terms of participation in ECE were identified in this report, and were evident in the analyses of survey data. Such difficulties were described by the various government and non-government stakeholders in our consultations, and were clearly documented in the existing literature. Here we will summarise the key issues facing measurement of access to ECE in the context of the NP ECE.

As in our own analyses in this report, access is often examined in fairly simple terms—as participation (or enrolment) in ECE. This measure of participation has the advantage of being easily understood and easily compared over jurisdictions and time. Compared to more sophisticated measures, it is also relatively easy to derive from existing datasets. There are, however, still challenges that mean even these estimates are not as exact as might be needed.

A very significant challenge in measuring access to ECE in Australia lies in the diversity of ECE systems across Australia. An initial challenge is that there is different nomenclature used for preschool and for the first year of school across the states. This can cause difficulties for interviewers and/or respondents when capturing information about children's participation in ECE in surveys (and also the Australian Census).

Another key issue is that the age at which children are to commence full-time school varies across jurisdictions. Further, there is some discretion around the age at which children start school, such that some children who are, according to their age, eligible to be in full-time school, may be held back to start the following year. Regarding measurement of access to ECE, this causes difficulties in identifying the population eligible for ECE.

Furthermore, as we have already discussed, in the eastern states, the model of ECE tends to involve the provision of ECE through long day care, as well as through standalone preschools. This more diverse range of options for ECE services can complicate the collection and interpretation of survey data on ECE participation. For example, some parents may not be aware of whether their child receives a preschool program in LDC, while some parents may find it difficult to say whether their child attends a preschool as opposed to a child care centre. This diversity of service providers adds complexity and challenges to the collection and analyses of administrative data also.

When the delivery of ECE is more uniform, as it is when aligned more with the government model, some issues still remain. For example, one issue is whether in survey data, children are correctly identified as being in school versus preschool when they are attending a preschool program in a school.

There is also a challenge that applies to all jurisdictions, in administrative data, that children may be double-counted if they attend more than one program. As data in this report demonstrate, a considerable number of children across the jurisdictions attended a combination of preschool and long day care.

Measurement issues are keenly felt at the operational level. While survey data offer the potential to study which children are, and are not, participating in ECE, this information may be of less value to administrators and service providers, who require information about ECE participation as it applies to their region or local area. For analyses of participation in ECE, stakeholders make use of their enrolment information, which allows examination of the characteristics of those who enrol. However, what these data do not include is, obviously, details of children who are not enrolling. This, then, limits the potential to study factors related to children missing out on ECE in that area or jurisdiction. Australian Census data can be helpful to identify potentially eligible populations, but these data become out-of-date between Census years (with gaps of up to five years).

To summarise, then, in line with many who have reported on the topic of ECE in Australia in the past, this component of the AECE project highlighted a range of difficulties related to the measurement of access to ECE, even when measured simply in terms of participation. Survey data can provide some insights, as we have seen in this report; however, to undertake these analyses there were several challenges. The divergence of some of the findings across different datasets highlights how important it is to be mindful of the limitations of the data that are currently available when using them for decision-making.

Nevertheless, despite the measurement difficulties and limitations, in this report we have shown that analysing participation in ECE using survey data can provide some insights, at least at the broader state/territory and national levels. The participation rates used in this report, like enrolment rates, have the advantage of being easily understood and easily compared over jurisdictions and time.

A multidimensional measure of access to early childhood education?

Focusing only on participation misses out on the multidimensionality of the concept of "access", as this disregards other dimensions, such as differences in hours of ECE and the quality of children's experience of the ECE program. Conceptually, it would be relatively simple to extend the notion of participation, as used in this report, to incorporate the dimension of time—to classify children, for example, as receiving no ECE, some ECE but fewer than 15 hours per week, and receiving ECE for 15 hours or more per week. In practice, there are likely to be challenges, especially for children who receive ECE across more than one program, and those who may vary their hours of ECE from week to week.

Adding in the other dimension to reflect the quality of the ECE experience for children is immensely more challenging. It may be possible to identify to what extent children are receiving their ECE from appropriately trained educators; however, in surveys, parents may be unaware of these details. Again, it would be difficult to capture instances of children receiving ECE from multiple providers. Of course, the qualification of the educator is just one indicator of the likely quality of the ECE experience. It is, however, not clear how other indicators could be captured to reflect individual children's experience within a program; for example, compared to other children, those with special needs and from culturally diverse or disadvantaged backgrounds may gain different experiences and benefits from an otherwise high-quality program.

These analyses have led us to the view that it is useful to measure access, in the first instance, in terms of participation or enrolment, which allows examination of how access varies across time, across jurisdictions and across different socio-economic groups. This, however, needs to be done carefully, being mindful of the data issues and limitations. Until access can be

measured well in this simple way, it will be difficult to draw in the other dimensions that have been highlighted in this report.

Consideration of the multidimensionality of access can still be acknowledged. This information about participation or enrolment could be supplemented with other more detailed, and perhaps qualitative information, to inform on these different aspects of access and provide more depth to the overall quantitative data.

7.3 Which children are missing out, and why?

In this component of the AECE project, we drew upon the views of stakeholders, the literature, and new analyses of three main datasets (AEDI, NSPCCC and LSAC), to explore which characteristics of children, families or regions might predict lower levels of access to ECE. These data analyses focused on access in terms of participation in ECE, for children in the year before full-time school. Children were considered to be in ECE if they were in either preschool or long day care. *Any* participation in LDC was counted as ECE, regardless of whether parents reported that their children had a preschool program as part of LDC. It was felt that any LDC for children of this age was likely to involve a structured program, and would be expected to have some component of early learning built in. Also, the decision to include any LDC as ECE was partly due to data quality concerns about the distinction between LDC with and without preschool programs.

Some analyses of the types of ECE used was also included, with a view to understanding whether there were particular gaps in the use of some types of services by those children who were potentially at risk of missing out on ECE. The CEaCS was also used in the analyses of parental decision-making around ECE participation.

We were cognisant that the different models of delivery of ECE might affect the levels of participation in ECE. However, the various data sources referred to here (including reports produced by jurisdictions, as well as our own analyses) did not present a consistent story at the state and territory level. We have therefore not attempted to make general remarks about the differences in participation rates across states and territories. However, the variation in *types* of ECE clearly reflected the state/territory differences in ECE delivery, showing up the greater reliance on LDC in the eastern states than in other states. In all states/territories, though, there was a significant proportion of children in both preschool and LDC.

Which children are missing out on ECE?

The analyses presented here confirmed the expectations of the stakeholders and also the findings reported in the literature that children missing out on ECE are more often represented among disadvantaged families, and among children who are perhaps in greatest need of ECE in respect of preparing children for school. The groups of children who stood out in these analyses as being less likely to be participating in ECE were Indigenous children and children from NESB families. Children from socio-economically disadvantaged families were also less likely to participate in ECE than those from socio-economically advantaged families. Children living in remote areas had the lowest levels of participation in ECE compared to those living in major city areas. There was also some variation according to the disadvantage of regions, but it was not clear that this reflected the characteristics of the regions or the families living within those regions.

We did find more variation in participation in ECE by these characteristics in the eastern states—the states in which ECE is more often provided through LDC. That is, there were greater differences in participation between the least and most vulnerable children in the eastern states than in the other states.

The factors driving the differences in ECE participation are not all easy to identify, given the overlapping nature of many of the characteristics we have examined. For example, compared to non-Indigenous children, Indigenous children are more likely to be living in socio-economically disadvantaged families and in remote regions, so their lower participation rates may be affected by all or any of these factors. Also, the analysis is complicated by the distinction between

preschool and child care. In particular, parental employment is likely to be strongly linked with a need for child care. Decisions about child care versus preschool for some families, are expected to be associated with parental employment factors, as well as the availability of different care and ECE options.

Why do some children miss out on ECE?

This question proved particularly difficult to answer within the scope of this research project, and we could not provide any definite answers. As discussed below, understanding reasons for non-participation would be best explored with a different research methodology.

With one of the differences in the models of delivery of ECE being the cost of services, an important question is to what extent cost (or perceived cost) of services affects access to ECE for more vulnerable or disadvantaged families. Issues of costs or availability to ECE were sometimes referred to by parents when they were asked why their children were not in ECE. However, parents were most likely to say their children were not in ECE because of reasons related to the availability of a parent to care for children, or related to a belief in parental care of children. This suggests some degree of choice being exercised by these parents, but it warrants further attention, preferably with a different research methodology that would allow the decision-making process to be explored more fully. This would be particularly useful in regard to more disadvantaged and vulnerable families.

The analyses of parental decision-making and types of ECE provide some insights into the various factors parents take into account when choosing ECE for their child. While some clear patterns emerge from some of these data, they need to be interpreted cautiously. For example, these analyses show that for children attending LDC only, the most common response parents provided as the reason for choosing this arrangement was to accommodate work and study commitments. Where children were attending a preschool-only program, however, the most common reasons provided focused on social and intellectual development. However, this does not mean that parents choosing only LDC don't value their child's development—it may be that they are also taking these factors into account when choosing ECE for their child.

Most of the findings presented here were consistent with expectations, although some suggest that further research may be useful in helping disentangle how different factors affect family decision-making regarding child participation in ECE. In particular, more research on factors related to family income, employment and parental education levels, and how they intersect with decisions about ECE would help in understanding the issues for more vulnerable families. If such research also took into account the availability of different types of ECE in the local area, it would be useful for examining how the supply of different services affects the decision-making of parents.

7.4 Conclusion

Returning to the broader focus of this project, we have presented the view that access to ECE should be considered as being multidimensional. This is important because participation or enrolment should not be seen as the end point and the intended goals of ECE need to be built into the concept of access.

However, in terms of measurement, this research suggests that it is important to address, as far as is possible, issues regarding the simplest measures of access—those of participation or enrolment—before attempting to incorporate other dimensions of access into the measures used. A simple measure of participation or enrolment is a useful starting point for monitoring trends and comparisons across groups. Even with some measurement difficulties, this report has highlighted the value of such measures in identifying some characteristics that are related to lower rates of access to ECE. To supplement this, more qualitative information, captured through one-off or occasional studies at regional (or national) levels, would be valuable for providing greater insights into the other aspects of access. Service providers and other stakeholders may also have available to them other ways of capturing some of the other dimensions of access that can be useful at the program level. Use of measures of participation or enrolment, along with this supplementary information, allows the multifaceted nature of access to be recognised

without attempting the collection of new information, which is likely to come with its own set of very challenging measurement issues.

Another important part of this paper was using the information that we have to examine to what extent, and why, certain children are missing out on ECE. These analyses have identified that there are some risk factors and, consistent with prior research, we have found that more vulnerable and disadvantaged families are more likely to miss out on ECE. The picture is complicated, though, in part because of the interplay between preschool and long day care, and how parental choice of such services for children will also depend on parents' employment arrangements.

The most difficult aspect of this research, then, is "why" some children miss out on ECE. Existing data do not really delve into this question sufficiently to be able to understand to what extent non-participation is related more to choice or to constraints of parents. In the preceding section, we already discussed some of the limitations of what we know about parents' decision-making in this regard. Gaining greater insights into the reasons for children's non-participation in ECE, as well as the experiences of children who do go, would be of considerable value. Such insights may need to be sought in a less structured format than is imposed through the questionnaires used in these analyses. More detailed discussions with parents may help to identify what the real barriers are for those not attending ECE and what factors are important within an ECE setting for their children to be able to fully experience the program.

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A Access to and use of early childhood education and care services: An international overview

Peter Moss

[The following is an overview article on access to and use of early childhood education and care services, prepared for the project by Peter Moss.]

This paper provides a brief overview of some issues in early childhood education and care (ECEC) services in two groups of countries:

- 30 member states of the European Economic Area, which consists of the 27 member states of the European Union (EU), plus three of the four members of the European Free Trade Association (EFTA; the fourth member, excluded in this overview, is Liechtenstein); and
- 3 predominantly English-speaking, non-European countries: Canada, New Zealand and the United States of America.

Of these 33 countries, 27 are member states of the OECD. The six that are not members are: Bulgaria, Cyprus, Latvia, Lithuania, Malta and Romania. The overview does not include the seven other OECD member states: Australia, Chile, Israel, Japan, Korea, Mexico and Turkey.

The paper addresses three issues:

- systems of ECEC in these 33 countries;
- access to ECEC services in these countries, including universal access and entitlement; and
- how access may be measured.

The paper centres on Table A1 (on page A2), which provides information about the 33 countries, together with this text, which provides a commentary on the table as well as some additional material. The table covers four main areas:

- the type of ECEC system in each country;
- compulsory school age;
- entitlement to ECEC; and
- attendance rates at formal ECEC services, given separately for children under and over 3 years.

In addition, the paper has a short annex about the relationship between entitlement to ECEC and parental leave. While the paper's main focus is the relationship between the upper end of ECEC and compulsory (formal) schooling, its brief being to "be primarily concerned with early childhood education in the year prior to commencing formal compulsory school", a complete view of the issue of entitlement should consider how ECEC relates to policy areas at each end of its age range, which includes parental leave policy at the lower end.

Table A1 Details of ECEC in 30 European countries, North America and New Zealand (2011)

Country	Type of ECEC system	Compulsory school age	Entitlement to ECEC	Attendance rate at ECEC (2009)	
				Under 3 years old (< 30 hrs/wk | 30+ hrs/wk)	3 years old to CSA (< 30 hrs/wk | 30+ hrs/wk)
European Economic Area member states (EU + EFTA, exc. Leichtenstein)					
Austria (F)	Unitary—Part (Welfare)	6 years	5 years: PT	10% (7% | 2%)	80% (58% | 21%)
Belgium (F)	Split (Ed. dominant)	6 years	2.5 years: FT	33% (17% | 16%)	99% (30% | 69%)
Bulgaria	Split (Ed. dominant)	7 years	None	8% (1% | 7%)	55% (7% | 48%)
Cyprus	Split (Ed. dominant)	** 4.8 years (school starts @ 5.8 years)	4.8 years: PT	22% (8% | 14%)	81% (40% | 41%)
Czech Republic	Split (Ed. dominant)	6 years	None	3% (3% | 0%)	64% (28% | 36%)
Denmark	Unitary—Full (Education)	* 7 years (6 years on voluntary basis)	6 months: FT	73% (10% | 63%)	84% (12% | 72%)
Estonia	Unitary—Full (Education)	7 years	18 months *** (3 years: FT)	25% (4% | 21%)	92% (9% | 84%)
Finland	Unitary—Full (Welfare)	* 7 years (6 years on voluntary basis)	Birth: FT	27% (6% | 21%)	78% (20% | 57%)
France	Split (Ed. dominant)	6 years	3 years: FT	41% (16% | 25%)	95% (48% | 47%)
Germany (F)	Unitary—Part (Welfare)	6 years	3 years: PT	19% (7% | 12%)	89% (48% | 40%)
Greece	Split (Ed. dominant)	** 5 years (school starts @ 6 years)	5 years: PT	11% (4% | 7%)	58% (33% | 25%)
Hungary	Split (Ed. dominant)	** 5 years (school starts @ 6 years)	Birth *** (3 years: FT)	7% (2% | 5%)	74% (17% | 57%)
Iceland	Unitary—Full (Education)	6 years	None	41% (4% | 38%)	99% (7% | 92%)
Ireland	Split (CC dominant)	* 6 years (4 years on voluntary basis)	3.25 years: PT	20% (15% | 5%)	87% (74% | 13%)
Italy	Split (Ed. dominant)	6 years	None	25% (9% | 16%)	92% (20% | 73%)
Latvia	Unitary—Part (Education)	** 5 years (school starts @ 7 years)	5 years: FT	15% (2% | 13%)	74% (7% | 67%)
Lithuania	Unitary—Part (Education)	7 years	None	10% (1% | 9%)	54% (4% | 51%)
Luxembourg	Split (Ed. dominant)	** 4 years (school starts @ 6 years)	4 years: PT	34% (22% | 12%)	71% (46% | 26%)
Malta	Split (Ed. dominant)	5 years	None	8% (4% | 4%)	77% (30% | 47%)
Netherlands	Split (CC dominant)	* 5 years (4 years on voluntary basis)	4 years: PT	49% (43% | 6%)	87% (75% | 12%)
Norway	Unitary—Full (Education)	6 years	1 year: FT	36% (8% | 27%) [2007]	81% (17% | 63%) [2007]
Poland	Split (Ed. dominant)	** 6 years (school starts @ 7 years)	6 years: PT	3% (0% | 2%)	38% (8% | 31%)
Portugal	Split (Ed. dominant)	6 years	5 years: FT	36% (2% | 34%)	81% (8% | 73%)
Romania	Split (Ed. dominant)	** 5 years (school starts @ 6 years)	5 years: PT	5% (4% | 1%)	63% (44% | 19%)
Slovenia	Unitary—Full (Education)	6 years	1 year: FT	31% (4% | 27%)	90% (16% | 73%)
Slovakia	Split (Ed. dominant)	6 years	None	3% (1% | 2%)	76% (13% | 63%)
Spain	Unitary—Part (Education)	6 years	3 years: FT	36% (18% | 18%)	94% (50% | 44%)

continued on next page

Table A1 Details of ECEC in 30 European countries, North America and New Zealand (2011)

Country	Type of ECEC system	Compulsory school age	Entitlement to ECEC	Attendance rate at ECEC (2009)	
				Under 3 years old (< 30 hrs/wk | 30+ hrs/wk)	3 years old to CSA (< 30 hrs/wk | 30+ hrs/wk)
Sweden	Unitary—Full (Education)	* 7 years (6 years on voluntary basis)	1 year: FT	63% (26% | 37%)	94% (29% | 65%)
Switzerland (F)	Split (Ed. dominant)	6 or 7 years	None	27% (23% | 4%)	74% (65% | 9%)
United Kingdom	Unitary—Part (Education)	* 5 years (4 years in N. Ireland) (4 years on voluntary basis)	3 years: PT	35% (31% | 4%)	91% (70% | 21%)
Other countries					
Canada (F)	Split (CC dominant)	6 years	None	24% (2006)	57% (2006)
New Zealand	Unitary—Part (Education)	* 6 years (5 years on voluntary basis)	None	38% (2008)	95% (2008)
United States (F)	Split (CC dominant)	6 years	None	31% (2005)	58% (2005)

Notes:

Abbreviations used in this table: F = Federal state; Ed. = Education; CC = Child care; PT = Part-time; FT = Full-time; CSA = Compulsory school age

Data are from 2009 unless otherwise indicated. Numbers are rounded.

Type of ECEC system:

Unitary = government responsibility integrated across all ECEC services. Full = system is fully integrated from birth to CSA, including access, regulation, funding and workforce. Part = government responsibility integrated, but not all of the other dimensions, i.e., access, regulation, funding and workforce. Education = government responsibility integrated in education; Welfare = government responsibility integrated in welfare or health.

Split = government responsibility for ECEC split between two ministries; all other dimensions split between two systems (education or welfare). CC dominant = child care provision/welfare dominant in ECEC system; Ed. dominant = school-based provision/education dominant in ECEC system.

Compulsory school age:

This mostly coincides with the child's age when starting at primary/elementary school. In some cases, children can enter primary/elementary school before the compulsory school age on a voluntary basis; countries where this occurs are shown using a "*" before the CSA, followed by the age at which children can enter school voluntarily.

In some countries, it is compulsory to attend an ECEC service for a period before starting school. In these cases, the age given is for compulsory attendance at ECEC and is preceded by "**", followed by the age at which children start in primary/elementary school.

Entitlement to ECEC:

Shows the age from which entitlement is operational. "***" indicates when the age of legal entitlement is not operational because of insufficient places, with the age following showing the actual age when entitlement is operational. PT = entitlement for 20 hours a week or less; FT = entitlement for longer than 20 hours a week.

Attendance rates:

Figures for European countries are for "formal" arrangements and include four types of child care and education: education at preschool; education at compulsory school; child care at centre-based services outside school hours (before/after) and child care at a day care centre. Therefore, formal arrangements include all kinds of care organised/controlled by a structure (public/private). Care provided by child-minders without any structure between the carer and the parents (direct arrangements) have been excluded from the definition of "formal" care in order to take into account only child care recognised as fulfilling certain quality patterns. The duration refers to average number of hours during a usual week (Eurostat, 2011).

The attendance figures for Canada, New Zealand and the United States are drawn from different sources compared to the European country data, which all come from European Union Statistics on Income and Living Conditions (EU-SILC). Data between these three countries and European countries is not, therefore, comparable; formal services, for example, may include a wider range of provisions, such as all registered child-minders carers at the home of the child.

The figures in square brackets show the proportion of children attending on average for fewer than 30 hours a week and the proportion attending for 30 hours a week or more; e.g., in Austria, 10% of children under 3 years attend formal services—7% for fewer than 30 hours week, 2% for 30 hours or more.

Sources: Bennett, 2010 (type, compulsory school age, entitlement); Eurostat, 2011 (attendance rates excluding "other countries"); Oberhuemer, Schreyer, & Neuman, 2010; OECD, 2011 (attendance rates "other countries").

A.1 Systems of ECEC

Early childhood education and care services are defined, in part, by the age at which children move into compulsory primary schooling. It can be seen from Table A1 that 6 years is the most common compulsory school age. However, in a few countries (e.g., Bulgaria, Estonia, Lithuania, Sweden, parts of Switzerland) compulsory school age is 7 years; while in a few others (e.g., Netherlands, the UK), it is 5 or even younger. But, as the paper will later discuss, compulsory school age and the transition from ECEC to primary schooling do not always coincide, either because a period of attendance at an ECEC service has itself been made compulsory or because children can enter primary schooling on a voluntary basis before compulsory schooling.

Types of ECEC systems

The main way in which ECEC systems are classified in Table A1 (see "Type of ECEC system", column 2) is according to whether administrative and policy responsibility for ECEC is split between two government departments (usually welfare, or health and education), *or* whether administrative and policy responsibility is integrated within one department (usually education; welfare in one case, Finland).[A1] Historically, every country has started out with a "split" system of ECEC, which, broadly stated, has involved a division between "(child) care" services in welfare or health, with provision mainly made in some form of non-school centre and family day care; and "early education" services in education, with provision that is often school-based. Some countries, however, in recent decades have moved towards a more or less integrated system (for further discussion of this development, see Kaga, Bennett, and Moss, 2010).

Each of these categories is further divided into two sub-groups. The countries with integrated responsibility—labelled "Unitary" in Table A1—divide into those whose ECEC systems are fully integrated along four key dimensions: access, regulation (including curriculum), funding and workforce; and those where one or more of these key dimensions is not fully integrated. In the case of the former countries, the ECEC system now operates as a seamless whole; in the latter countries, important elements of the former split remain, despite administrative and policy integration.

The countries that have not integrated responsibility—labelled "Split" in Table A1—divide between those where education provision is dominant, providing ECEC services for a majority of children, usually with most children from 3 years of age attending some form of school provision for a three-year period; and those where child care provision is dominant, mainly because educational provision is limited to a period of two years or less, and child care provision provides for children up to 3 years and, in some cases, for a substantial proportion of children over 3 years. In the former "education dominant" group, early education is more likely to be provided in separate "nursery schools" (the French *école maternelle* being a well-known example). While in the latter "child care dominant" group, early education is more likely to consist of nursery or kindergarten classes attached to a primary school.

Following this four-way typology, countries in the table can be grouped as follows:

1. *unitary, fully integrated:* Denmark, Finland, Iceland, Norway, Slovenia, Sweden
2. *unitary, not fully integrated:* Austria, Estonia, Germany, Latvia, Lithuania, Spain, UK, New Zealand
3. *split, education dominant:* Belgium, Bulgaria, Cyprus, Czech Republic, France, Greece, Hungary, Italy, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Switzerland
4. *split, child care dominant*: Ireland, Netherlands, Canada, United States.

These different types of system have implications for access. As OECD's (2006) *Starting Strong* review concluded, "variations in access and quality are lessened [when policy is integrated] under one ministry" (p. 49). Whereas countries in groups 2, 3 and 4 may provide universal access or entitlement to children over the age of 3, only countries with fully integrated unitary

[A1] Finland has recently announced that it will transfer responsibility for its integrated ECEC system from welfare to education at the start of 2013. All countries with fully integrated systems will then have those systems located in education.

systems (group 1) extend the same access conditions to children both over and under 3 years: universal access from at least the age of 1 year is one of the defining features of this group.

It will be immediately obvious that countries are not randomly grouped. The unitary, fully integrated group is predominantly Nordic; the split, education dominant group is mainly Continental European; while the split, child care dominant group is made up of predominantly Anglophone countries. There is also substantial correspondence with some typologies of welfare state regimes, particularly those that divide countries into "social democratic", "conservative" and "liberal" regimes (Esping-Andersen, 1990).

Compulsory age for starting education

As already noted, there is some variation in compulsory school age (see column 3 of Table A1), though 6 years is the most common. Several countries have, however, moved in recent years to make a period at ECEC compulsory, usually one year preceding the start of school, and usually justified in terms of ensuring children's "school readiness". Countries that have lowered the age of compulsory attendance in this way are mainly from central, eastern and southern Europe and include: Cyprus, Greece, Hungary, Latvia, Luxembourg, Poland and Romania.[A2] Other countries offer early admission to school on a voluntary basis, in some cases (such as Denmark and Sweden) providing a special "pre-school" class for these early entrants. These trends are weakening the relationship between the onset of compulsory education and the transition from ECEC to primary school.

Attendance rates

The issue of entitlement to a place in an ECEC service (see column 4 of Table A1) is discussed under "Access to ECEC services". The last part of Table A1 (column 5) provides information on attendance rates. Here the discussion on definitions and comparability of attendance rates, given in the notes section under the table, is important. For example, the data for European countries are comparable in the sense that they are based on countries collecting and classifying data to an agreed, common format, but they do not include certain providers, such as many child-minders and carers coming into a child's own home; by contrast, the data for the three non-European countries come from individual, national datasets (i.e., non-comparable sources) and may include some of the carers omitted in the European data. Both sets of data should exclude provision made informally, especially by grandparents and other relatives, which in many countries continues to make a major contribution to child care, especially for children under 3 years (though, it is interesting to note, relatives and friends have virtually disappeared as providers of such regular care in the Nordic countries, where parents have access to well-run and highly subsidised formal services for children from 12 months or younger) (Bennett & Moss, 2010).

Children under 3 years of age

Table A1 shows clearly how attendance rates for children under 3 years are generally far lower than for children 3 years and older. One reason for this is that most countries provide entitlements to paid postnatal leave, which reduces demand for ECEC among parents with very young children, especially where leave is paid at a high earnings-related rate. (For further information on leave entitlements, see Moss, 2011; see the Annex for a discussion of the relationship between leave and ECEC entitlements.) Another and more important reason is that ECEC services for children under 3 years are generally less available and more costly than services for children 3 years and over; as the next section demonstrates, entitlement to use such

[A2] There are arguments for and against making ECEC compulsory. The argument in favour emphasises school readiness, especially for "disadvantaged" children whom, it is argued, are in particular need of additional support to be ready for primary school. Under a voluntary system, attendance may be over 90%, but the small group of non-attenders usually includes disproportionate numbers of "disadvantaged" children (see, for example, evidence from England discussed from page A11). The argument against emphasises parents' right to choose whether or not to send their children to ECEC and also the need for ECEC services to work on reforming themselves to become more responsive and more welcoming to attract all families, including those who feel alienated or excluded by unreformed services. Compulsory attendance may also remove the need for services to be self-critical and innovative.

services often does not exist. However, having said this, attendance for children under 3 years varies considerably between countries, ranging from Denmark's very high rate of 73% to 5% or less in four countries.

Countries can be categorised into three groups, according to their ECEC attendance rates:

1. *high* (33% or over): Denmark, France, Iceland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, UK, New Zealand;[A3]
2. *medium* (11–32%): Belgium, Cyprus, Estonia, Finland, Germany, Greece, Ireland, Italy, Latvia, Slovenia, Switzerland, Canada, USA; and
3. *low* (10% or less): Austria, Bulgaria, Czech Republic, Hungary, Lithuania, Malta, Poland, Romania, Slovakia.

Spotting commonalities between the countries in each group is not so easy as in the previous categorisation of ECEC structures. The "high" group includes four Nordic countries, but not Finland—the only Nordic country with a 3-year parental leave option—and also includes two southern European countries (Portugal and Spain) and two Anglophone countries (UK and New Zealand). The "low" group mostly consists of central and eastern European countries, formerly in the Soviet-dominated bloc, whose low levels of provision in part reflect the running down of services for under 3s after regime changes, due to financial pressures and a widespread reaction against employment among women with young children (for a discussion of this process in the Czech Republic and Hungary, see chapters on these countries in Kamerman & Moss, 2009). The "medium" group contains a very disparate group of countries.

A further way of looking at attendance rates is to consider how, in each country, the overall rate of attendance is divided between shorter and longer hours of attendance, defined here as under 30 hours a week and 30 hours a week and over respectively. The same overall attendance rate in two countries may disguise a very different pattern of usage when hours of attendance are taken into account. This analysis is only possible for European countries, given the data available. But among those countries, there are large differences. For example, to take the extremes, in Denmark, 73% of under 3s attend formal services, 86% of whom attend for 30 hours a week or more (63% out of 73%); while at the other extreme, in the Netherlands, the pattern is reversed, with 49% of under 3s attending formal services, and only 12% going 30 hours a week or more (6% out of 49%). Attendance for the full day is the norm in Denmark, while attendance for part-time hours is the norm in the Netherlands.

If we exclude countries with low levels of attendance overall (10% or less), the remainder can be divided into three groups:

1. *longer hours of attendance > shorter hours* (by more than 5 percentage points): Denmark, Estonia, Finland, France, Iceland, Italy, Latvia, Norway, Portugal, Slovenia, Sweden;
2. *longer and shorter hours similar* (within 5 percentage points): Belgium, Germany, Greece, Spain; and
3. *shorter hours of attendance > longer hours* (by more than 5 percentage points): Cyprus, Ireland, Luxembourg, Netherlands, Switzerland, United Kingdom.

All six countries with fully integrated unitary systems appear in group 1, which also includes many countries with relatively low part-time employment rates for women. At the other end of the spectrum, group 3, are three countries (Ireland, Netherlands and the UK) with high levels of part-time employment, and also substantial numbers of 2-year-olds attending part-time "playgroup" services.

Children 3 years of age and older

Moving to attendance rates for children 3 years and over, the much higher figures in every country reflect a trend, at least in Europe, towards near universal attendance for this age group; and as compulsory schooling age is mainly 6 years, this is a trend also towards three years of attendance at ECEC. Again, the 33 countries can be divided into three groups:

[A3] The European Union in 2002 set ECEC targets—usually referred to as the "Barcelona Targets"—for member states: "Member States should … strive, taking into account the demand for child care services and in line with the national patterns of childcare provision, to provide childcare by 2010 to… at least 33% of children under 3 years of age" (European Council, 2002, p. 12).

1. *high* (90% or over): Belgium, Estonia, France, Iceland, Italy, Slovenia, Spain, Sweden, UK, New Zealand; [A4]
2. *medium* (70–89%): Austria, Cyprus, Denmark, Finland, Germany, Hungary, Ireland, Latvia, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Switzerland; and
3. *low* (below 70%): Bulgaria, Czech Republic, Greece, Lithuania, Poland, Romania, Canada, United States.

This distribution, again, presents no clear-cut patterns. Two Nordic countries are in the "high" group, but three are in "medium"; and two Anglophone countries (New Zealand, UK) are in the "high" group, while two (Canada and the United States) are in the "low" group. What is noticeable is that four continental western European countries with strong 3-year "nursery education" services (Belgium, France, Italy, Spain) are in the "high" group; while five central and eastern European countries (Bulgaria, Czech Republic, Lithuania, Poland and Romania) are in the "low" group.

Summary

Taking an overview of attendance rates for children under 3 years *and* 3 years and over, and taking account of both total attendance and the balance between shorter *and* longer hours, the lead countries for ECEC attendance are three of the five Nordic states (Denmark, Iceland and Sweden), together with Belgium and France. The countries that lag most are Bulgaria, Greece, Lithuania and Poland.

A.2 Access to ECEC services

The concept of access is, as the second report of OECD's (2006) *Starting Strong* review reminds us, "a complex one" (p. 75). For a start, universal access or entitlement need not equate with or require complete coverage:

> Universal access does not necessarily entail achieving full coverage, as there are variations in demand for ECEC at different ages and in different family circumstances. Rather, it implies making access available to all children whose parents wish them to participate. (p. 14)

Furthermore, parental demand may not be uniform across or within countries; it may vary between different groups and between different areas, and it may change over time. Employment patterns and the availability of substitute policies (e.g., parental leave) can affect the call for and use of ECEC services; so too can changing parental expectations and understandings of good parenting and what a good childhood is. This mix of factors is well exemplified by the high attendance at ECEC in Nordic countries like Denmark and Sweden, which reflects not only high parental employment rates and high levels of good-quality provision, but also a high level of parental satisfaction with the well-developed and accessible system of ECEC services in these countries. Two Swedish researchers (Lenz Taguchi & Munkammar, 2003), in a report for UNESCO, highlighted the related factor of changing expectations among Swedish parents:

> Enrolling children from age one in full-day pre-schools has become generally acceptable. What was once viewed as either a privilege of the wealthy for a few hours a day, or an institution for needy children and single mothers, has become, after 70 years of political vision and policy-making, an unquestionable right of children and families. (p. 27)

Then, again, to be accessible—to make access to ECEC a realistic option—services have to meet certain conditions. For example, they need to be free or available at a price all parents can afford, which in turn calls for public investment: affordability, as OECD's (2006) review noted, is

[A4] The EU's Barcelona Targets, referred to in footnote 3, also specify that "Member States should … strive, taking into account the demand for child care services and in line with the national patterns of childcare provision, to provide childcare by 2010 to at least 90% of children between 3 years old and mandatory school age" (European Council, 2002, p. 12). More recently, the strategic framework for European cooperation in education and training, adopted by the EU in May 2009, set a benchmark to be achieved by 2020 that at least 95% of children between the age of four and the age for starting compulsory primary education should participate in early childhood education (Council of the European Union, 2009).

"often an issue, and in many countries, low-income groups are excluded in practice from access to centre-based services" (p. 46). Services need to be equally available to all age groups and to provide an offer that parents need and want, in terms of, for example, quality, opening hours and type of provision. In sparsely populated areas, they need to be within reasonable travelling distance. More generally, services need to be equally available in all parts of a country, and this may be an especially difficult issue where there is strong decentralisation of responsibility for ECEC:

> Experience from the OECD reviews suggests that devolution of powers and responsibilities may widen differences of access and quality between regions. In the devolution process, it seems important to ensure that early childhood services are part of a well-conceptualised national policy, with, on the one hand, devolved powers to local authorities and, on the other, a national approach to goal setting, legislation and regulation, financing, staffing criteria, and programme standards (OECD, 2006, p. 13)

Last but not least, ECEC services need to recognise and be responsive to the diversity of children and families and their needs:

> Access is often inappropriate for children with special needs and/or additional learning needs, so much so that directors of centres may not allow them to enrol, or parents—seeing the difficulties involved for their children—simply desist. If access is achieved, classes may be far too large for these children, or appropriately trained staff may not be available to take them in charge. Similarly, group sizes, care and pedagogical approaches may be unsuitable for very young children in early education systems established along school lines (OECD, 2006, p. 82).

Taking these points into account, and looking at the conclusions of *Starting Strong*, as well as the overview of 33 countries in Table A1, a few broad generalisations can be made. First, at present the access "winners" are children over 3 years, at least in Europe where:

> the concept of universal access for 3- to 6-year-olds is generally accepted. Most countries provide all children with at least two years of free, publicly-funded provision before they begin primary schooling. In fact, with the exception of Ireland and the Netherlands, [among the countries reviewed] such access is generally a statutory right from the age of 3 years, and in a handful of countries from an earlier age. Early education programmes in Europe are often free, and attached to schools (OECD, 2006, p. 77).

The point to be emphasised here is that universal access in Europe is not limited to the year prior to compulsory schooling, but is well on the way to coverage of a two- or (usually) three-year preschool period. Outside Europe, however, the OECD (2006) *Starting Strong* review concluded that "provision is generally much weaker" (p. 77).

By contrast, and clearly shown in Table A1, access for children under 3 years is much lower, in Europe and elsewhere. Lower levels of access—because there are fewer services and/or they are more costly—are associated with increased inequality, particularly for children from lower income and migrant backgrounds. A revealing analysis of European Union Statistics on Income and Living Conditions (EU-SILC) data (a source discussed further on page A12), this time for 2005, shows the extent of inequality in access to formal services for children under 3 years, depending on their mothers' level of education (Table A2). In the Netherlands and the UK—countries with marketised systems and no entitlement for children under 3 years—inequality of access is marked, both in absolute terms and compared with access to formal services

Table A2 Comparison of attendance rates in Netherlands, United Kingdom, Denmark and Sweden for children under 3 years, by mother's level of education, 2005

Mother's level of education	Netherlands (%)	United Kingdom (%)	Denmark (%)	Sweden (%)
Low	16	13	75	52
Medium	37	30	72	56
High	59	39	70	47

Source: Unpublished secondary analysis of EU-SILC data, cited in Bennett and Moss (2010)

in Denmark and Sweden—countries with high and sustained levels of public support and entitlement for children under 3 years. Although the unequal access in the Netherlands and the UK is highlighted here, the same pattern is apparent in most non-Nordic European countries.

To get a full, comprehensive and comparative picture of access, taking account of all the issues raised above, would require access to large, detailed and multinational datasets that simply do not exist at present. The best that can be done for the moment is to consider, in the broadest of terms, the overall situation on access in the 33 countries, taking account of whether an entitlement to an ECEC place has been established, and levels of provision. Once again, the situation in the 33 countries considered here can be reduced to four broad groups:

- entitlement to ECEC:
  - with obligatory attendance;
  - without obligatory attendance;
- no entitlement to ECEC:
  - with universal access; and
  - without universal access.

Entitlement to ECEC

Entitlement with obligatory attendance

As already noted, seven of the 33 countries have made ECEC attendance compulsory for 1 to 2 years of the period immediately before the start of primary school. The other side of compulsory attendance is that such attendance must be free. In all cases, this obligatory attendance is for shorter hours, so that entitlement is limited in terms of both duration and hours of attendance.

Entitlement without obligatory attendance

In these cases, government is required by law to provide a place in an ECEC service if requested to do so by a parent. Usually countries only introduce such entitlements when they are confident there is sufficient capacity to meet demand. But in two of the 33 countries covered (Estonia and Hungary), though laws exist that entitle children under 3 years to ECEC provision, these entitlements cannot be met due to a shortage of places.

In addition to the seven countries where attendance is obligatory, 16 out of the 33 countries provide an entitlement to attend ECEC for a period of time. This entitlement is:

- 5 years in Austria, Portugal and 4 years in the Netherlands—in each of these three cases, entitlement is only for the year immediately before compulsory schooling;
- 2.5–3.5 years in Belgium, France, Germany,[A5] Ireland, Spain and the UK; also, in effect, from this age in Estonia and Hungary, even though the law refers to an entitlement from an earlier age, because there are insufficient places to meet demand; and
- 1 year or less in Denmark, Finland, Norway, Slovenia, Sweden.

As just noted, the most common age at which entitlement comes into force is around 3 years, giving 2 to 3 years of "entitled" attendance. Four of the five Nordic states, plus Slovenia, have taken entitlement further to 12 months or younger, though, to reiterate an earlier point, this does not mean that every child attends a formal service from these young ages. Entitlement in these five countries means the possibility of attending services on a part-time or full-day basis. Entitlement starting at 3 years or above is more likely to be for part-time hours; that is, 20 hours a week or less, though it is longer in some countries.

The period of attendance covered by entitlement is usually free of charge to parents, removing the issue of affordability. However, parents in the four Nordic countries and Slovenia do have to make a financial contribution, though that contribution is kept low by a high level of public funding. A partial exception is Sweden, where there is a free period of attendance of 525 hours

[A5] Local authorities in Germany must, by 2013, ensure ECEC provision for children under 3 years for all parents who are employed or undertaking professional training, which will extend entitlement downwards in age.

a year for 3–5 year olds, with the remaining attendance period (before 3 years and beyond 525 hours a year) attracting a charge.[A6]

The free attendance is related to the rationale for entitlement, which is educational; that is, entitlement is seen as providing children with access to early education, and education is usually treated as a free (at time of use) public good. The Nordic countries and Slovenia, which require a parental contribution, have fully integrated all their ECEC services (in education, except for Finland where, until 2013, welfare remains responsible for all ECEC), treating care and education as inseparable; in other words, they no longer distinguish between "child care" and "education", and the entitlement can be seen as being both for children and parents and both for child care and educational reasons. Sweden provides an important example of this thinking. Entitlement for children from 12 months was initially introduced in 1995, but only for children with employed or studying parents or who had special needs. Following the transfer in 1996 of government responsibility for the integrated ECEC system from welfare to education, entitlement was extended to all children, irrespective of their parents' employment status.

No entitlement to ECEC

This leaves ten countries with no entitlement to ECEC access at any age, for compulsory or voluntary attendance: Bulgaria, Iceland, Italy, Lithuania, Malta, Slovakia, Switzerland, Canada, New Zealand[A7] and the United States. These countries can be divided into two more groups.

No entitlement but access for all parents wanting a service

In a few countries, provision of ECEC services is so extensive that all children whose parents choose to send them have access to these services, even though there is no formal entitlement. This situation applies to services for children 3 years and over in Iceland and Italy, with attendance in Italy being free of charge.

No entitlement, no universal access

The situation of having a shortage of places (compounded sometimes by the cost of what are available) applies in a number of countries, especially for children under 3 years. In such circumstances, children may have to remain in full-time maternal care or else parents make widespread use of informal arrangements, such as relatives.

Summary

To conclude, this discussion has emphasised that the concepts of "access" and "entitlement" may overlap, but that they are not synonymous. Universal access, on paper, may not convert into universal access in reality if services are too expensive, inadequately distributed or unresponsive to the diverse needs of children and parents. Universal access may exist without the accompaniment of a legal entitlement to access; sufficient places exist to meet demand. While, in a few cases, legal entitlement may exist without universal access due to an insufficiency of places, this renders the entitlement meaningless and effectively nullifies it. Mostly, though, countries with an entitlement have universal access; "universal" in this case meaning not that all children attend but that all children attend whose parents wish them to. In a few cases, though, entitlement and universal access are backed by the state requiring that all children do attend ECEC for a period of time before formal primary schooling.

[A6] This charge is capped by a maximum fee. For example, the maximum that a parent with a child aged 1 to 6 years attending an ECEC service pays is A$185 a month; the maximum for a second child is A$125.

[A7] New Zealand provides funding to services for 20 hours of early childhood education for 3 and 4 year olds. But this is only available to children attending services that "opt in" to the scheme, and attendance for this age group is not an entitlement.

A.3 How access may be measured

There are two broad approaches to the measurement of access, which can also contribute to an assessment of the effects of entitlement on attendance. Both can be illustrated by the case of England, where an entitlement to free part-time attendance for 3 and 4 year olds at ECEC, to receive early education, was introduced for 4-year-olds (in 1998) and for 3-year-olds (in 2004). It should be noted that this entitlement can be delivered by a variety of public and private providers in a variety of types of provision.

The first method is based on *administrative returns* from local authorities and providers. The latest published information on the "provision of education for under fives in the maintained, private, voluntary and independent sectors" in England is for January 2011 (Department for Education [England], 2011) and draws on three Census exercises:

- *The Early Years Census*: Local authorities (LAs) are "under a statutory obligation to send individual child-level information for every funded three and four year old child in a private, voluntary or independent provider. The return provides child-level information about the number of three and four year olds benefiting from *some free* early education in private, voluntary and independent providers. Also, the return records the aggregate numbers of three and four year olds *taking up* early education places in those private and voluntary providers and independent schools that are registered with LAs and receive some government funding for delivery of the free entitlement" (p. 5; original emphasis).
- *The School Census*: This collects data from schools on "the number of three and four year olds benefiting from some early years education in maintained [i.e., publicly funded] schools, at January of each year" (p. 5).
- *The School Level Annual School Census*: this collects information on "the number of three and four year olds benefiting from some early years education in independent schools" (p. 5).

These three sources are used to produce an annual report called *Provision for Children Under Five Years of Age in England*, though its remit is in fact limited to 3- and 4-year-olds receiving the publicly funded early education entitlement.

Tables produced for the Department of Education (England) report (2011) cover numbers of "three and four year olds taking up or benefiting from early education places" (p. 6) by type of provider and by local authority area (of which there are 152). Take-up is also expressed in terms of *percentage* of the population of 3- and 4-year-olds who attend early education, based on mid-year estimates and projections of population, provided by the UK Office of National Statistics. For example, it is estimated that in England in January 2011, "the number of 3 and 4 year olds benefiting from some free early education (where each child is counted once …) was 1,224,465 or 95% of the 3 and 4 year old population" (p. 1). Put another way, it appears that, on the Census dates, only about 5% of children were not taking up the two-year part-time entitlement.

The second method for measuring access is to use large-scale national sample surveys targeted on specific groups, in this case, the eligible population for the entitlement to early education: parents with at least one child aged 3 or 4 years. This approach was adopted by the previous (Labour) government, to monitor take-up of the newly introduced entitlement to early education. Annual surveys were commissioned over six years (running from 1997 to 2002) of parents of three and four year old children and their use of early years services, drawing a large sample of 3- and 4-year-olds from government-held Child Benefit records, then interviewing their parents to gather information on usage of ECEC services for 3- and 4-year-olds, as well as on parental perceptions and attitudes (for the last survey, in 2002, see Bell and Finch, 2004).

Because this survey was focused specifically on use of ECEC by 3- and 4-year-olds, it was able to cover a wide range of related items, not only on access to and use of services, but on issues such as parents' understanding of and attitudes towards ECEC, relationships between parents and providers, parent perceptions of children's transition into school, and learning activities at home. Such surveys also score over administrative data in that they can include and examine families not using ECEC.

Further surveys were commissioned by the English government in 2007 and 2008 to examine parents' use of child care and early years services in England. These surveys were still targeted, but rather more widely, having a broader remit, to cover parents with children aged up to and including 14 years, though oversampling families with 2–4 year olds "in order to enable a more detailed analysis of the take-up of early years education by this age group" (Speight, Smith, La Valle et al., 2010, p. 1). A spin-off from the second of these surveys, was a study of the take-up of the universal early education entitlement by disadvantaged families, going further into the relationship between universal access and actual usage. The conclusions from this secondary analysis work (Speight, Smith, Coshall, & Lloyd, 2010)—cited at some length here to demonstrate the potential of such targeted survey work—included that:

- children from lower income and larger families (i.e., with three or more children), those whose mothers did not work and those whose mothers did not have any academic qualifications were less likely to receive early years provision;
- children from lone-parent families were more likely to receive early years provision than those from two-parent families when the analysis took account of differences in work status, income and other socio-demographic characteristics between these two types of families;
- the take-up of early years provision was similar for boys and girls, and it did not vary by whether the child had a longstanding illness or disability or by whether they had special educational needs;
- compared with children whose mothers were white, children of black African, Pakistani and Bangladeshi mothers were substantially less likely to receive early years provision; however, once the analysis controlled for differences in socio-demographic profile between families from different ethnic backgrounds, the effect of ethnicity on uptake of early years provision was no longer significant; and
- children living in deprived areas were less likely to receive early years provision than those living in more affluent areas.

Overall, the authors (Speight, Smith, Coshall, & Lloyd, 2010) concluded that:

> there was a strong association between the level of multiple disadvantage experienced by the family and their take-up of early years provision. In families experiencing no disadvantage only 3% of children were not attending any early years providers, whereas the proportion was higher for families experiencing some or a lot of disadvantage, with the highest figure (13%) found among the most disadvantaged families.
>
> There were differences in the types of providers attended by children depending on the level of disadvantage experienced by their families. Children from the most disadvantaged families were more likely to receive early years provision at nursery classes and less likely to receive it at playgroups/pre-schools, day nurseries and childminders, whereas attendance at reception classes and nursery schools did not vary by level of multiple disadvantage. (pp. 2–3)

An alternative application of the survey method to gather information on access and take-up of entitlement is to add questions on these subjects to non-targeted general surveys. While the range of items to be covered will be more limited, due to the other demands being placed on the survey, this may prove less costly and ensure long-term data. The EU's information on attendance rates across member states is currently based on this method, working through the EU-SILC, which aims to collect "timely and comparable cross-sectional and longitudinal multidimensional microdata on income, poverty, social exclusion and living conditions" for each EU member state" (Eurostat, 2010). Data collection is linked to an existing survey in each member state, and harmonised methods and definitions are applied to establish reliable comparisons between member states. The information required for EU-SILC from each member state falls into five core areas, one of which is labour market data that includes "child care" (though in effect this picks up attendance at all formal ECEC services, including nursery schooling).

EU-SILC and similar general surveys have the potential to link up data on use of ECEC services to other items included in the survey. Such linkages, however, need resources and capacity for secondary analysis, meaning that some of the potential of this method may not be realised. The routinely published information on ECEC from EU-SILC is limited to attendance at formal

services by country, age of child and hours of attendance. However, much more use could be made of the dataset, as Table A2 illustrates.

From these examples, it might be concluded that the issue is not so much how to measure the extent to which universal access or entitlement is taken up, but what other questions are thought to be important in relation to access and entitlement. Who uses access opportunities and who does not? Why do users use ECEC and why do non-users not do so? Is use higher in some areas than others? How are ECEC services used and how would parents like them to be improved? It is the range and type of questions posed that will determine the best means to be used to measure access and entitlement.

A.4 Concluding comments

As early childhood education and care moves up national policy agendas, levels of provision are increasing and it is becoming more common for countries to provide an entitlement to such services. Entitlement is usually for two to three years from the age of 3 years to compulsory school age, and in a few cases overlaps with making ECEC attendance compulsory for a period immediately before school. Provision and attendance for children under 3 years lags behind, though it is also increasing in most countries. However, only a few countries have extended entitlement to children under 3 years, and those are countries with fully integrated systems of ECEC, well-developed services, and systems of parental leave that are coordinated with ECEC entitlement.

Administrative data can give a broad overview of actual attendance rates, including the extent to which entitlement is taken up by parents for their children. But other methods, particularly surveys, are needed to get a fuller picture of which children and families are using or not using ECEC services, and also their reasons for doing so. This fuller picture is important if there is a political and policy concern that ECEC services are accessible to and accessed by all children and families. It is also important that disadvantaged groups or groups with additional needs are not under-represented, as high overall levels of attendance may mask concentrations of non-attendance among those groups that policy most wants to reach.

A.5 Annex: Relationship between entitlement to parental leave and ECEC

Most discussions of policy frameworks to support employed parents with young children highlight two key policies: parental leave and ECEC. Table A3 looks at the relationship between these two policy areas, and in particular at whether they are coordinated in the sense that an entitlement to leave leads immediately into, or coincides with, an entitlement to ECEC. The table includes 27 countries, mostly but not wholly corresponding to the 33 countries in Table A1. Data have been taken from the 2011 annual international review of leave policies and research produced by the international network on leave policies and research (Moss, 2011).

Nineteen countries have an entitlement to an ECEC service, but in most cases—13 countries—this is only from 3 years of age or later (including Estonia and Hungary, which have a legal entitlement to ECEC at an earlier age, but shortage of places means the entitlement is not operational until around 3 years). Entitlement in this group is often limited to part-time places.

Only six countries have entitlement before 3 years: at 2.5 years in Belgium, and at 12 months or younger or at the end of parental leave in five countries: Denmark, Finland, Norway, Slovenia and Sweden, with full-time places being available in all cases. It is only in these five countries that policies are designed to ensure no gap between the end of *well-paid* leave and the start of an ECEC entitlement. Elsewhere, this gap is from 18 to 67 months that, if combined with countries that have no ECEC entitlement, emphasises the extensive lack of coordination between these two policy areas.

Table A3 Relationship between leave and ECEC entitlements, 2011

	Child's age (months) at:			Gap between …	
	End of leave	End of well-paid leave	Start of ECEC entitlement	end of leave & start of ECEC	end of well-paid leave and start of ECEC
Austria	24	1.8	• 5 years PT	36 months	58 months
Belgium	34	4.0	•• 2.5 years	No gap	26 months
Canada (2006)	12	None	–	–	–
Québec	13	13	–	–	–
Croatia	12 + bonus 2	12 + bonus 2	–	–	–
Czech Republic	36	5.1	–	–	–
Denmark	14	14	•• 6 months	No gap	No gap
Estonia	36	18	• 18 months (* 3 years)	No gap	18 months
Finland	36	9 + bonus 1	•• End of parental leave	No gap	No gap
France	36	3.5	• 3 years	No gap	33 months
Germany	36	13.3 + bonus 2	• 3 years PT	No gap	20 months
Greece	19–60	6–12	• 5 years PT	41 months	48–54 months to no gap
Hungary	36	24	• Birth (* 3 years)	No gap	12 months
Iceland	15.2	9.0	–	–	–
Ireland	15.7	6.0	• 3.25 years PT	24 months	33 months
Italy	13.7 + bonus 1	3.7	–	–	–
Luxembourg	13.8	1.8	• 3 years PT	22 months	34 months
Netherlands	14.3	2.3	• 4 years PT	34 months	46 months
New Zealand	12.5	3.2	–	–	–
Norway	36.7	12.2	•• 12 months	No gap	No gap
Poland	41.1	5.1	• 6 years PT	31 months	67 months
Portugal	36 + bonus 1	6 + bonus 1	• 5 years	24 months	54 months
Slovenia	14.2	11.5	•• End parental leave	No gap	No gap
Spain	36	5.1	• 3 years	No gap	31 months
Sweden	18	13.2	•• 12 months	No gap	No gap
Switzerland	3.2	3.2	–	–	–
United Kingdom	18.5	1.4	• 3 years PT	18 months	35 months
USA	–	–	–	–	–

Notes:

Well-paid leave = Period of leave paid at least at 66% of normal earnings.

Bonus = A bonus of additional months of leave is available to a family where part of the basic entitlement is shared by mothers and fathers. This is intended to provide an incentive for fathers to take leave

– = No entitlement to ECEC; • = Entitlement to ECEC, but only from 3 years or older; •• = Entitlement to ECEC from below 3 years of age; PT = entitlement for 20 hours a week or less; * = There is an obligation to provide a place, but this obligation cannot be met due to shortages of provision. This shortage usually applies to children under 3 years, and the bracketed figure indicates when the entitlement can usually be met in practice. The gap in the next column refers to the later age; that is, when the entitlement is implemented in practice.

Source: Moss (2011)

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B Measuring access to early childhood education services

This section provides an overview of how the various data sources have been used to analyses ECE in this report. Each of the following is described in turn: NSPCCC, AEDI, LSAC and CEaCS.

Within each section, in addition to a description of the data source, particular attention is given to the way in which ECE has been identified, and how children who were in the year before full-time schooling were identified, where applicable.

While the best solution to these and other measurement issues was sought, some problems remain, such that no dataset proved to be ideal in analysing ECE.

B.1 National Survey of Parents' Child Care Choices (NSPCCC)

Background

This survey collected detailed information in 2009 about child care and ECE attendance of children aged 0–12 years.

The NSPCCC was designed to examine:

- how parents make decisions around child care and preschool;
- what key factors influence the use of child care and preschool;
- how parents choose a child care service provider or preschool program; and
- the impact of care choices of children reaching school age.

The survey was conducted by computer-assisted telephone interview, based on a random sample of Australian households, with sampling designed to obtain sufficient numbers of households with a child in the target age ranges (0–12 years of age). Households with children aged 3–5 years were over-sampled.

The sample frame for the NSPCCC survey was designed to record the child care status of a total sample size of 7,000 "reference children", with usually one, but sometimes two, reference children selected per household. In total, information was collected on 7,970 children from 5,625 households.

In selected households, the parent who was the main or joint decision-maker about child care or early education was identified and asked to provide details about the care arrangements for all children in the household aged up to 12 years. More details were then collected for the first child selected. Some details were collected for a second reference child, if applicable and if respondents agreed.

The sample was also selected with the aim of having minimum numbers of respondents in the various remoteness categories within each state.

Identifying children who were in the year before full-time schooling

Data were collected for a total of 7,970 children. Of these, 4,071 were aged 3–5 years, and were fairly equally spread across ages within this group. From these children, more detailed information was collected of those specifically identified as reference children. There were 3,865 3–5 year olds among the reference children.

To analyse ECE participation, details about the children's states of residence and birth dates were used to determine whether, at the time of the survey, they were in the year before full-time schooling. The eligibility information upon which this was based is shown in Table B1. The assumption was that children would go to school in the year that they became eligible to enter school. Children's actual attendance in ECE or school was also taken into account, such that if children were predicted to be in school (because their age made them eligible in that jurisdiction) but they were recorded as not yet being in school, then it was assumed they would start school the following year. Children were recorded as already being in school if they were reported to be in school and were aged 5 or over, even if their birth date and eligibility criterion led to their being coded as being in the year prior to full-time schooling.

Given that some children are delayed in their entry to school, there are likely to be some children who are assessed in these data as being in the year before full-time schooling but who will actually be two years prior to starting schooling. As such, these data may overstate the percentage of children who are not in ECE in the year prior to full-time schooling.

Some children were excluded from the analyses, as it could not be determined whether or not they were already in school. This includes those who were classified as having no care/ECE (or school) arrangements, but when parents were asked why not, their reason was classified as "at school" (*N* = 266 children).

The NSPCCC subsample of reference children who were predicted to be in the year before full-time schooling was *N* = 1,637 children.

Table B1 Assumptions regarding when starting school, NSPCCC

	Is in year before full-time schooling if:	Number predicted to be in the year before full-time schooling	
		Age 4 years at survey	Age 5 years at survey
NSW	exact age at 31 July is 4 years to less than 5 years; or exact age at 31 July is 5 years, and not yet attending school	377	94
Vic.	exact age at 30 April is 4 years to less than 5 years; or exact age at 30 April is 5 years, and not yet attending school	225	105
Qld	exact age at 30 June is 4 years to less than 5 years; or exact age at 30 June is 5 years, and not yet attending school	229	47
SA	age at time of survey is 4 years to less than 5 years; or age is 5 years, and not yet attending school	116	32
WA	exact age at 30 June is 4 years to less than 5 years; or exact age at 30 June is 5 years, and not yet attending school	120	46
Tas.	exact age at 31 January is 4 years to less than 5 years; or exact age at 31 January is 5 years, and not yet attending school	38	34
NT	exact age at 30 June is 4 years to less than 5 years; or exact age at 30 June is 5 years, and not yet attending school	88	23
ACT	exact age at 30 April is 4 years to less than 5 years; or exact age at 30 April is 5 years, and not yet attending school	40	23
Total		1,233	404

Note: A small number of children (*N* = 101) classified as 4 years old above were just less than 4 years old at the time of the survey, but were due to turn 4 years old before the cut-off date for that state/territory.

Classification of early childhood education

Parents were initially asked, for each child in the family, whether they were usually cared for by someone else. For children aged 4 and older, this was determined by the question: "I'd now like to ask you some questions about the care, preschool [or appropriate state nomenclature], kindergarten [or appropriate state nomenclature], out-of-school hours or school arrangements for your child/children. Apart from you [you and current partner] does anyone else look after or supervise [child] on a regular basis? This includes both teachers and care workers." If the response was "no", this was the end of the care/ECE questions and details were asked of the next child, if applicable. While this question quite specifically referred to teachers as well as care workers, there may have been some children coded here to "no" who were actually in some ECE program. The NSPCCC methodological report (Social Research Centre, 2010) states:

> As expected, there was some respondent confusion around the relationship between childcare, pre school and school. Even with the additional scripting to focus parents on care provided by teachers, many respondents did not relate school or pre school to child care and, as such, were asked additional questions that they did not feel were directly relevant to their situation. (p. 21)

Parents who answered "yes" to this screening question, for each child, were then asked, "Is care provided by a child care centre, a carer or a teacher or does someone else look after the child?". If the response was "yes", parents were asked about the following types of formal care: family day care, home care, LDC at a child care centre, occasional care, and after-school-hours care. When children were said to attend LDC, parents were further asked if the child received a preschool education program while there. Parents who did not know if their child attended a preschool program in LDC (5% of children in LDC in the sample analysed) were included with LDC without preschool. Other details of informal care use were also collected.

Parents of children aged 3–5 years, were then asked if the child attended preschool or received a preschool education program. Those who already said their child attended a preschool education program in LDC were asked if this child attended preschool somewhere else.

From this information, children were classified as shown in Table B2. Children classified as having no preschool/LDC includes children only in parental care, family day care, receiving home care or other informal care. Note that in this report, for simplicity of presentation, we usually present LDC at the aggregate level only, omitting the detail of whether it was with or without a preschool program.

Table B2 Classification of early childhood education using NSPCCC reference children

	N	Unweighted %	Weighted %
Preschool only	757	46.2	42.3
Preschool and LDC	159	9.7	8.1
LDC	402	24.6	31.7
without a preschool program	93	5.7	7.3
with a preschool program	309	18.9	24.4
Not in ECE	319	19.5	17.9
Total	1,637	100.0	100.0

Interviewers were given instructions about the typical characteristics of LDC and preschool/kindergarten. They were instructed about the different nomenclature for preschool and for the pre-Year 1 level of schooling. The state-appropriate nomenclature was used in the questionnaire.

Children were excluded from the analyses if the type of early education/care could not be determined.

These details were collected of all children in the family. For the more detailed questions in NSPCCC, one reference child (or sometimes two) was selected from each family, with various rules given to interviewers in how these reference children were to be selected (e.g., "priority 1" children were those aged 4–5 years, to maximise the number of reference children in these

years of early education). More detailed information about care/ECE was collected for these reference children.

This report uses information for these reference children, rather than all children in the family.

Summary of key data limitations and problems

- Some children may have been coded as having no care (or early education), when in fact they were in some form of care or early education.
- Some 4-year-old children classified as being in the year before full-time schooling may in fact be two years before full-time schooling, and so the percentage in no ECE may overestimate the percentage among children who are in the year before full-time schooling.
- While the sample size is reasonable, even at the state/territory level, the sample sizes become very small when wishing to analyse specific patterns (or non-use) of ECE by demographic groups.

B.2 *Growing up in Australia:* The Longitudinal Study of Australian Children (LSAC)

Background

Growing Up in Australia: The Longitudinal Study of Australian Children is being conducted in a partnership between FaHCSIA, AIFS and the ABS. The study aims to examine the impact of Australia's unique social, economic and cultural environment on children growing up in today's world.

The study follows two cohorts of children who were selected from across Australia. Children in the B cohort ("babies" at Wave 1) were born between March 2003 and February 2004, and children in the K cohort ("kindergarten" at Wave 1) were born between March 1999 and February 2000. The study is representative of Australian children in these birth cohorts.

The sampling frame for LSAC was taken from the Medicare database. Initially, a sample of postal areas was chosen, and children in the birth cohorts in those regions were selected. Postal areas from across Australia were selected, with the exception of remote parts of Australia.

To date, data from four main waves of the survey are available, collected in 2004, 2006, 2008 and 2010.

Much of the information in LSAC is collected from the child's primary carer, who is usually the mother.

This report uses information collected about the B cohort, when the children were aged 4–5 years, in 2008. This is Wave 3 of LSAC. The total sample size at that time was 4,386 children. Note that there is some bias in this sample, with the Wave 3 sample comprising around 86% of the original Wave 1 sample. Sample weights adjust for the probability of selection into the LSAC sample, as well as attrition, and have been used in these analyses.

While the K cohort at Wave 1 could also be used to provide information about care and ECE arrangements of 4–5 year olds, these data were collected in 2004, and so it was considered preferable to use the B cohort data that provided information for this age group at a more recent time. Questions about ECE and care varied between the two cohorts, as the B cohort questions were improved to address some problems that were identified with the Wave 1 collection (LSAC Project Operations Team, 2009).

Identifying children who were in the year before full-time schooling

Children in the B cohort, at the third wave, were aged 4–5 years, and were therefore at the age of preschool or school participation. For these analyses, children were excluded if they were already in pre-Year 1 in school. This left a possible sample of 3,005 children. All these children

were due to start full-time schooling the next year, according to parents' reports of the program that their children were expected to attend the following year.

Classification of early childhood education

Considerable effort was made in this study to design questions that captured the various ways in which care and ECE can be provided at this age, and to cater for the state differences in nomenclature. Interviewers were provided with supplementary information about the state variation in names for preschool and for the first year of full-time schooling (LSAC Project Operations Team, 2009).

The primary carer was initially asked "Does the Study Child currently go to a school, kindergarten, pre-school or a long day care centre?". If yes, they were asked if this was in a school. (If the children attended more than one, the parents were asked to report about the one in which the children spent the most hours per week.)

Parents were asked what program this was, including Year or Grade 1, pre-Year 1 program, preschool/kindergarten, LDC centre/early learning program or other. For children not in school, parents were similarly asked about the program the child attended, and they were given options of preschool/kindergarten-only centre; preschool/kindergarten in a LDC centre; mobile preschool; LDC; and other.

Quite a lot of the LSAC parents chose "LDC" rather than "preschool program in LDC". We are reluctant to interpret this as meaning those who chose "LDC" did not have a preschool program provided. It may simply be that parents see this predominantly as LDC. No particular probing followed to check whether a preschool program was offered. We have therefore classifed these respondents just as "LDC".

Detailed information about this main care/ECE program was collected in LSAC, and these details have been used when presenting such information in this report.

Later, parents were asked about other care arrangement of the child. This information was used in conjunction with the above information to determine whether children attended a mix of care arrangements, to identify children who attended preschool as well as LDC. Other details of these secondary arrangement (e.g., hours in care) have not been used in this report.

The information was used to classify children as shown in Table B3. Note that in this report, for simplicity of presentation, we usually present LDC at the aggregate level only, omitting the detail of whether or not this was with a preschool program.

Table B3 Classification of early childhood education using LSAC

	N	Unweighted %	Weighted %
Preschool only	1,684	56.0	54.8
Preschool and LDC	321	10.7	9.6
LDC	821	27.3	28.4
LDC (with preschool program not selected)	346	11.5	11.6
LDC with a preschool program	475	15.8	16.8
Not in ECE	179	6.0	7.1
Total	3,005	100.0	100.0

Summary of key data limitations and problems

- LSAC does not cover remote parts of Australia. State estimates can be produced, although sample sizes are quite small in the smaller states. State estimates will be differentially affected by the exclusion of remote areas.
- The bias in the sample, largely due to attrition at Wave 3, means that the most disadvantaged Australian children may not be fully represented in the study.

B.3 Australian Early Development Index (AEDI)

Background

The AEDI is being conducted by the Centre for Community Child Health (at The Royal Children's Hospital, Melbourne) in partnership with the Telethon Institute for Child Health Research, Perth.

The AEDI measures how young children are developing in defined Australian "communities". It provides a population measure of children's development at the time they start primary school. The primary aim of the AEDI is to provide data to help communities in the development and reorientation of services and systems to enable them to improve the health and wellbeing of young children.

Data are to be collected every three years, with the first data collection taking place in 2009. The AEDI population comprises all children in the first year of full-time primary schooling within a community or a geographic area.

The AEDI is based on the scores from a teacher-completed checklist, with over 100 questions covering five developmental domains: physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, and communication skills and general knowledge. The analyses in this paper are based on the full AEDI unit record file.

Identifying in-scope sample

To focus the analyses on children who were eligible for ECE in 2008 (the year prior to the 2009 collection, of children in the first year of full-time schooling), children were excluded if (a) they were included in the 2010 AEDI supplementary collection; or (b) they were recorded as having repeated the first year of full-time schooling. This left a total sample of 256,817 children, out of the total 268,726 children on the unit record file.

Notionally, all of these children should have been eligible for early education. Exceptions may exist, for example, for children who have very recently migrated to Australia; however, these data were analysed on the assumption that all AEDI respondents will have been eligible for early childhood education.

Classification of early childhood education

For each child, information about program type in the year before entering school is requested in the AEDI collection. For teachers completing the checklist, this information will have been sourced from school enrolment forms, and so relies upon parents having completed this information with sufficient detail to enable the data to be provided by the teacher.

The first question asked is, "In the year before entering school has the child been in non-parental care on a regular basis and/or attended any other educational programs?". The overall non-response ("don't know", or missing) to this item was 7.9% (among those in the in-scope sample for these analyses). Non-respondents were excluded from the analyses, reducing the in-scope sample to 236,284.

The items available for analyses then classify children into "yes", "no" or "don't know" for the types of care or ECE they received prior to full-time schooling. There were some additional non-responses here. A total of 50,664 children were reported to have attended a day care centre with a preschool/kindergarten program, and 15,730 attended a day care centre without a preschool/kindergarten program, but 29,458 children were reported to have attended a day care centre where it was not known if this included a preschool/kindergarten program. This meant the distinction between with/without a preschool/kindergarten program was somewhat unreliable. As a result, this distinction is not used in these analyses. A very small number of records were excluded at this point, as missing data on these items meant the type of ECE prior to starting full-time school could not be derived.

Note that there was somewhat higher reporting of having no prior ECE than might have been expected in some states. One possibility is that children who received ECE *at the school* were coded as not being enrolled elsewhere prior to school commencement, and so estimates may

undercount ECE participation. This information was used to classify children as shown in Table B4.

Table B4 Classification of early childhood education using AEDI

	N	Unweighted %
Preschool only	128,545	54.4
Preschool and LDC	24,055	10.2
LDC only	58,252	24.7
Not in ECE	25,399	10.8
Total	236,251	100.0

Note: As the AEDI covered the vast majority of children in Year 1 of school, no weights were used in analyses.

Summary of key data limitations and problems

The key limitation of these data relates to the uncertainty of the data quality. Data quality relies on:

- parents providing schools with accurate information on ECE participation;
- this information allowing identification of preschool versus child care;
- how ECE that children attended at the school prior to pre-Year 1 school was captured; and
- teachers referring to this information when completing the AEDI checklist.

Also, the AEDI data are limited in respect to family information, such that ECE participation cannot be related to parental employment, education, income or relationship status.

It must be noted, however, that the very obvious strength of these data lie in the size of the dataset and coverage across Australia, which allow analyses of the more vulnerable groups of children, as well as state-level analyses.

B.4 The Childhood Education and Care Survey (CEaCS), ABS

The ABS has conducted a survey of child care use approximately every three years since 1969. This was previously (up until 2005) known as the Child Care Survey. Its name was changed in 2008 to reflect its increased focus on education.

The CEaCS is conducted in conjunction with the monthly labour force survey, which is a multistage area sample of private and non-private dwellings across Australia. Information is collected by interview with one person in the family within selected households, with information most often reported by mothers. Data collected relate to child care use in the week prior to the interview. This is timed to be outside of school holidays.

Within respondent households, child care details are collected for children aged under 12 years old. In families with more than two children in a family, two children are randomly selected and detailed child care items are collected for these children. (The application of weights ensures their representativeness of all children.)

The survey data were used in this report to analyse parental decision-making and preferences concerning children's non-participation in ECE, or participation in different types of ECE.

While these data could also have been analysed to examine ECE participation rates, we could not accurately identify children who were in the year prior to full-time school, so the analyses would not have been consistent with analyses of other datasets. We were also aware that these data were being analysed in respect to ECE participation in another report under preparation.

The information on school-aged children's prior participation in ECE could have been used, but we felt that analyses of the three other datasets provided us with sufficient information to address the research questions. These data were not as current as the other data included, which would have been especially problematic considering the changes in ECE that have occurred in Queensland in recent years.

C

Supplementary tables

Table C1 Children's participation in early childhood education in year prior to full-time schooling, by state/territory, NSPCCC, 2009

	NSW (%)	Vic. (%)	Qld (%)	SA (%)	WA (%)	Tas. (%)	NT (%)	ACT (%)	Aus. (%)
Preschool only	38.8	52.5	24.2	46.8	60.5	56.7	48.4	54.0	42.3
Preschool plus LDC	3.7	9.9	6.3	19.8	10.4	22.5	20.6	19.1	8.1
LDC									
without preschool program	7.6	5.5	12.9	0.6	5.3	1.8	1.5	3.2	7.3
with preschool program	34.8	16.8	34.0	6.5	3.6	4.6	7.2	12.7	24.4
Not in ECE	15.1	15.4	22.6	26.3	20.2	14.4	22.2	11.1	17.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total in standalone preschool	42.5	62.4	30.5	66.5	70.9	79.2	69.0	73.0	50.4
Gov./public preschool	14.0	41.6	6.8	54.8	49.5	61.6	62.4	55.6	27.1
Other (community, private or other) preschool	28.6	20.7	23.7	11.7	21.4	17.6	6.6	17.5	23.3
Total in LDC	46.1	32.2	53.2	26.9	19.3	28.9	29.3	34.9	39.8
Sample size (*N*)	471	330	276	148	166	72	111	63	1,637

Note: Based on NSPCCC reference children. Percentages may not total exactly 100.0% due to rounding.

Source: NSPCCC

Table C2 Children's participation in early childhood education in year prior to full-time schooling, by state/territory, LSAC, 2008

	NSW (%)	Vic. (%)	Qld (%)	SA (%)	WA (%)	Tas. (%)	NT (%)	ACT (%)	Aus. (%)
Preschool only	44.9	67.1	30.3	66.1	76.2	87.0	75.4	72.1	54.8
Preschool and LDC	2.8	12.9	4.1	21.7	20.7	13.0	24.6	19.8	9.6
LDC	42.1	18.8	46.5	11.9	2.7	-	-	8.1	28.5
Not in ECE	10.2	1.3	19.0	0.4	0.3	0.0	0.0	0.0	7.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total in standalone preschool	47.7	79.9	34.4	87.8	96.9	100.0	100.0	91.9	64.4
Not school setting	38.1	70.5	29.4	63.0	16.0	1.9	14.5	42.9	45.2
In school	9.7	9.4	5.1	24.8	81.0	98.1	85.5	48.9	19.2
Total in LDC	45.0	31.7	50.7	33.6	23.5	13.0	24.6	27.9	38.1
Sample size (*N*)	835	891	634	215	267	83	34	46	3,005

Note: Percentages may not total exactly 100.0% due to rounding.

Source: LSAC (2008).

Table C3 Children's participation in early childhood education in year prior to full-time schooling, by state/territory, AEDI, 2009

	NSW (%)	Vic. (%)	Qld (%)	SA (%)	WA (%)	Tas. (%)	NT (%)	ACT (%)	Aus. (%)
Preschool only	50.3	72.9	25.9	68.6	65.0	67.4	64.3	66.0	54.4
Preschool and LDC	6.1	9.8	7.6	19.5	18.5	23.0	16.0	19.7	10.2
LDC only	32.0	11.4	49.6	6.0	4.7	3.4	8.2	8.8	24.7
Not in ECE	11.6	5.9	16.9	5.9	11.8	6.2	11.5	5.5	10.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sample size	80,277	56,713	47,034	14,851	25,291	5,306	2,796	3,983	236,251

Note: Percentages may not total exactly 100.0% due to rounding.

Source: AEDI (2009)

Table C4 Multivariate analyses of children in early childhood education in year prior to full-time schooling, NSPCCC and LSAC, excluding parental employment and education

	NSPCCC (*OR*)	LSAC (*OR*)
Eastern states (NSW, Vic., Qld) (ref. = All others)	1.02	0.04***
Locational factors		
Remoteness (ref. = Major cities)	1.00	1.00
Inner regional areas	0.77	0.88
Outer regional areas	0.61*	0.54**
Remote or very remote areas	0.53**	0.34*
Socio-economic status of region (ref. = Most disadvantaged, bottom 20%)	n.a.	1.00
Middle advantage, middle 60%		1.33
Most advantaged, top 20%		1.66
Socio-economic status of families		
Family income (ref. = Higher incomes, top 20%)	1.00	1.00
Lower incomes, bottom 20%	0.56*	0.31***
Middle incomes, middle 60%	0.83	0.55
Single parent (ref. = Couple parent)	1.64*	1.32
Indigenous child	0.93	0.20***
Non–English speaking background	0.77	0.62
Special health care needs		1.32
Age at survey (months)	0.94***	1.05
Constant	425.78***	37.25
Sample size	1,631	2,936

Note: In these analyses, enrolment in any preschool or LDC was counted as being in ECE. See Appendix E for further information about the variables listed. * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

Table C5	Remoteness and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, NSPCCC and LSAC				
	Major cities (%)	Inner regional areas (%)	Outer regional areas (%)	Remote or very remote areas (%)	Australia (%)
NSPCCC [a]					
In ECE					
Preschool only	40.5	45.2	44.6	52.6	42.3
Preschool and LDC	7.9	7.6	9.6	11.3	8.1
LDC	35.6	27.7	21.9	9.5	31.7
Not in ECE	16.0	19.4	23.8	26.6	17.9
Total	100.0	100.0	100.0	100.0	100.0
Sample size	665	377	291	304	1,637
LSAC [b]					
In ECE					
Preschool only	54.3	54.8	56.6	60.6	54.8
Preschool and LDC	9.4	8.7	11.5	9.2	9.6
LDC	30.0	29.9	20.6	18.1	28.4
Not in ECE	6.2	6.6	11.3	12.1	7.1
Total	100.0	100.0	100.0	100.0	100.0
Sample size	1,835	630	460	75	3,005

Note: Refer to Appendix B for important notes regarding these estimates. [a] Chi-square (6) = 61.9, $p = .000$ (excludes those with no ECE). [b] Chi-square (6) = 16.3, $p = .012$ (excludes those with no ECE).

Source: NSPCCC (2009); LSAC (2008)

Table C6	Socio-economic status of region and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, LSAC			
	Most disadvantaged (bottom 20%) (%)	Middle advantage (middle 60%) (%)	Most advantaged (top 20%) (%)	Australia (%)
In ECE				
Preschool only	53.7	54.0	60.5	54.8
Preschool and LDC	6.8	11.1	7.9	9.6
LDC	27.5	28.9	28.2	28.5
Not in ECE	12.0	6.0	3.4	7.1
Total	100.0	100.0	100.0	100.0
Sample size	658	1,885	462	3,005

Note: Refer to Appendix B for important notes regarding these estimates. This is based on the SEIFA Index of Disadvantage from the 2006 Census, matched to SLAs. Chi-square (4) = 7.01, $p = .14$ (excludes those with no ECE).

Source: LSAC (2008)

Table C7 Family income and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, NSPCCC

	Lower incomes (bottom 20%) (%)	Middle incomes (middle 60%) (%)	Higher incomes (top 20%) (%)	Australia (%)
In ECE				
Preschool only	45.7	42.8	38.6	42.3
Preschool and LDC	4.2	11.5	9.1	8.1
LDC	26.7	31.4	40.7	31.7
Not in ECE	23.4	14.3	11.6	17.9
Total	100.0	100.0	100.0	100.0
Sample size	262	562	193	1,637

Note: Chi-square (6) = 24.2, $p = .000$

Source: NSPCCC (2009)

Table C8 Primary carer employment and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, NSPCCC

	Primary carer not employed (%)	Primary carer employed part-time (%)	Primary carer employed full-time (%)	Australia (%)
In ECE				
Preschool only	49.0	36.9	34.5	42.3
Preschool and LDC	5.0	11.4	10.1	8.1
LDC	21.7	38.3	46.6	31.7
Not in ECE	24.3	13.4	8.8	17.9
Total	100.0	100.0	100.0	100.0
Sample size	764	613	258	1,637

Note: Chi-square (4) = 70.8, $p = .000$ (excludes those with no ECE).

Source: NSPCCC (2009)

Table C9 Single/couple parents and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, LSAC and NSPCCC

	Single parent (%)	Couple parent (%)	Australia (%)
LSAC [a]			
In ECE			
Preschool only	39.9	57.4	54.8
Preschool and LDC	10.6	9.5	9.6
LDC	39.7	26.5	28.5
Not in ECE	9.8	6.7	7.1
Total	100.0	100.0	100.0
Sample size	347	2,658	3,005
NSPCCC [b]			
In ECE			
Preschool only	35.2	43.2	42.3
Preschool and LDC	8.4	8.1	8.1
LDC	38.6	30.8	31.7
Not in ECE	17.8	17.9	17.9
Total	100.0	100.0	100.0
Sample size	198	1,438	1,636

Note: [a] Chi-square (2) = 56.5, $p = .000$ (excludes those with no ECE). [b] Chi-square (2) = 7.1, $p = .03$ (excludes those with no ECE)

Source: LSAC (2008); NSPCCC (2009)

Table C10 Primary carer education and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, LSAC and NSPCCC				
	Incomplete secondary education (%)	Secondary education or diploma/ certificate (%)	Bachelors degree or higher (%)	Australia (%)
LSAC [a]				
In ECE				
Preschool only	43.5	41.8	42.0	42.3
Preschool and LDC	4.6	8.6	8.9	8.1
LDC	28.4	31.5	33.2	31.7
Not in ECE	23.4	18.1	15.8	17.9
Total	100.0	100.0	100.0	100.0
Sample size	269	732	612	1,637
NSPCCC [b]				
In ECE				
Preschool only	53.1	52.9	59.0	54.8
Preschool and LDC	9.4	8.9	11.1	9.6
LDC	24.5	30.6	26.9	28.5
Not in ECE	12.9	7.6	3.0	7.1
Total	100.0	100.0	100.0	100.0
Sample size	389	1,711	905	3,005

Notes: [a] Chi-square (4) = 6.1, p = .19 (excludes those with no ECE). [b] Chi-square (4) = 7.4, p = .12 (excludes those with no ECE).
Source: LSAC (2008), NSPCCC (2009)

Table C11 Indigenous status and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, AEDI, NSPCCC and LSAC			
	Not Indigenous (%)	Indigenous (%)	Australia (%)
AEDI [a]			
Type of ECE			
Preschool only	54.8	45.3	54.4
Preschool and LDC	10.1	11.9	10.2
LDC	34.9	33.6	24.7
Not in ECE	10.3	21.0	10.8
Total	100.0	100.0	100.0
Sample size	226,058	10,226	236,284
NSPCCC [b]			
Type of ECE			
Preschool only	42.4	38.6	42.3
Preschool and LDC	8.1	7.8	8.1
LDC	31.9	22.9	31.7
Not in ECE	17.6	30.6	17.9
Total	100.0	100.0	100.0
Sample size	1,564	72	1,637
LSAC [c]			
Type of ECE			
Preschool only	55.9	33.4	54.8
Preschool and LDC	9.8	6.7	9.6
LDC	28.2	33.6	28.4
Not in ECE	6.1	26.2	7.1
Total	100.0	100.0	100.0
Sample size	2,905	100	3,005

Notes: [a] Chi-square (2) = 119, p = .000 (excludes those with no ECE). [b] Chi-square (2) = 3.5, p = .17 (excludes those with no ECE).
[c] Chi-square (2) = 10.6, p = .005 (excludes those with no ECE).
Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

Table C12 NESB status and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, AEDI, NSPCCC and LSAC

	English-speaking (%)	Non–English speaking (%)	Australia (%)
AEDI [a]			
Type of ECE			
Preschool only	55.4	47.4	54.4
Preschool and LDC	10.4	8.7	10.2
LDC	24.6	24.9	24.7
Not in ECE	9.6	19.0	10.8
Total	100.0	100.0	100.0
Sample size	207,435	28,849	236,284
NSPCCC [b]			
Type of ECE			
Preschool only	42.6	38.2	42.3
Preschool and LDC	8.4	5.4	8.1
LDC	31.2	35.8	31.7
Not in ECE	17.8	20.5	17.9
Total	100.0	100.0	100.0
Sample size	1,535	97	1,637
LSAC [c]			
Type of ECE			
Preschool only	55.6	51.0	54.8
Preschool and LDC	10.4	4.7	9.6
LDC	27.5	33.9	28.4
Not in ECE	6.5	10.4	7.1
Total	100.0	100.0	100.0
Sample size	2,728	212	3,005

Notes: [a] Chi-square (2) = 130, p = .000 (excludes those with no ECE). [b] Chi-square (2) = 2.4, p = .30 (excludes those with no ECE). [c] Chi-square (2) = 8.68, p = .01 (excludes those with no ECE).

Source: AEDI (2009); NSPCCC (2009); LSAC (2008)

Table C13 Special health needs status and percentage of children participating in early childhood education in year prior to full-time schooling, by type of ECE, AEDI and LSAC

	No special health care needs (%)	Has special health care needs (%)	Australia (%)
AEDI [a]			
In ECE			
Preschool only	55.2	52.5	54.8
Preschool and LDC	9.7	9.1	9.6
LDC	27.7	33.0	28.4
Not in ECE	7.4	5.4	7.1
Total	100.0	100.0	100.0
LSAC [b]			
In ECE			
Preschool only	55.2	52.5	54.8
Preschool and LDC	9.7	9.1	9.6
LDC	27.7	33.0	28.4
Not in ECE	7.4	5.4	7.1
Total	100.0	100.0	100.0
Sample size	2,561	444	3,005

Notes: a Chi-square (2) = 101, p = .000 (excludes those with no ECE). b Chi-square (2) = 3.45, p = .18 (excludes those with no ECE).

Source: AEDI (2009); LSAC (2008)

D Analyses of parental decision-making

The fact that participation in ECE is voluntary for children in the year prior to full-time schooling will mean that an enrolment rate of 100% may not be achieved. Even if accessibility and cost are not barriers to children's participation in early education, parents may elect to keep children out of any formal learning until they are required to enter school. In this section, we attempt to see to what extent this currently occurs. We also report on the extent to which parents report that they experience barriers to children's enrolment in early education.

While estimates of the proportion of children not in ECE are not precise, we can explore this group of children a little more closely by analysing the reasons that parents give for their children not attending early education, or the reasons for choosing particular forms of ECE or child care. Very detailed analysis is not possible as sample sizes are often quite small. Also, being based on survey data, the analysis is limited by the response options available. These options do not necessarily provide sufficient information to fully understand the decisions made and the barriers that are relevant to children's participation in early education.

D.1 NSPCCC

For children in the NSPCCC who were in no formal child care or ECE the year before full-time schooling (N = 289), parents were asked why this was so. This question specifically asked why family day care and LDC were not used, so parents were not necessarily thinking about preschool participation when answering this question. The most common separately identified response of parents related to their valuing the importance of home care for children (22% of parents). Significant numbers were coded to a range of options, all of which reflected that a parent was at home to care for the child, and care was not needed (39% of parents). There was little overlap in the reporting of these two reasons (just 3% gave responses that were coded in each of these categories). This left 41% of parents giving other reasons. This included having a lack of trust in formal child care (9%), having friends of family looking after the child (5.5%), reporting that the child care was too far away (6%), was too expensive (16%) or too difficult to get into (1%). A large number of responses were recorded as "other" (14%).[D1]

For the children in the NSPCCC who were not attending preschool, questions were asked about why this was so. Note that this was separate to the question discussed above about non-participation in formal care. For reasons that are not clear, only one-quarter of the parents answered this question (out of 411 children who were not in ECE in the year before they were predicted to be starting full-time schooling, 102 gave responses to this question).[D2] Of these, 36% said the child was too young, 5% said non-participation was related to the affordability of preschool, 5% said that preschool was not available, 33% gave other reasons, and 19% said that they did not know why.

[D1] Parents were asked to provide a main reason and any other reasons. Response options on the questionnaire were "belief in importance of home care" and "lack of trust in formal child care". Other reasons were recorded as text and later coded into response categories. The figure cited here for there being a parent at home to care for the child included response categories "not working (stay at home parent)", "not working (other reasons)", "at home—no need—available to do it", "maternity leave" and "flexible working hours".

[D2] Respondents may have skipped this question if they had previously answered the question about non-participation in formal care. Parent responses were captured as open-ended questions that were coded to the categories reported during survey processing.

In NSPCCC, for school-aged children who had not attended preschool (5% of children, *N* = 59), parents were also asked why this was so. Of these, 5.6% gave answers relating to there being no places available and 14% gave reasons indicating that they could not afford it. The remaining 82% were coded to "other reasons".[D3]

D.2 LSAC

A similar mix of reasons is found when the LSAC data are used (B cohort, Wave 3). As for the abovementioned question in NSPCCC, if applicable, parents of 4–5 year old children who were expected to start full-time schooling next year were asked why children were in no child care or ECE ("What is the main reason the Study Child does not attend school, pre-school, kindergarten or a long day care centre?"). This applied to 158 children. The largest response groups were "parent is available—not needed" (20%), "child does not need it" (19%), followed by "can't afford it—cost too high" (16%), "other—quality/program issues" (12%), "child is too young or old" (10%), "problems with getting places" (9%), and "other—accessibility or affordability" (7%).[D4]

D.3 CEaCS

A similar question was asked in CEaCS. Of children aged 4–8 years who were in school and had not attended preschool or LDC prior to school (19% of children in this age group, *N* = 377, had not attended), the main reason given was "prefer to care for child at home" (73%). Except for "other reasons" (15%), the next most common reason given for children having not attended preschool or LDC was having moved from interstate or overseas (6%).

[D3] This information was collected as an open-ended question. It appears that only those responses relating to availability and affordability were specifically identified in survey processing.

[D4] Other response categories with smaller percentages were "unsuitable location for home" (2%), "transport problems" (< 1%), "child has disability or special needs" (2%), "does not suit culture or ethnic beliefs" (1%), "does not want cared by strangers" (< 1%).

E

Multivariate analyses

Table E1 Variables used in multivariate analyses, child in ECE versus not in ECE

Variable	AEDI	NSPCCC	LSAC
State/territory			
	An indicator of large eastern states (NSW, Vic. & Qld) versus other state/territories was included Models were also estimated separately by state	An indicator of large eastern states (NSW, Vic. & Qld) versus other state/territories was included	An indicator of large eastern states (NSW, Vic. & Qld) versus other state/territories was included
Local area characteristics			
Remoteness	Major cities, inner regional, outer regional, remote, very remote; the two remote categories were combined in the analyses	Major cities, inner regional, outer regional, remote, very remote; the two remote categories were combined in the analyses	Major cities, inner regional, outer regional, remote, very remote; the two remote categories were combined in the analyses
Socio-economic status of region	SEIFA score of relative disadvantage used to capture information about local area disadvantage, such as low income, low educational attainment, high unemployment and relatively unskilled occupations SEIFA score for the AEDI community was used, but was not available for NT records The distribution of scores in the dataset was used to classify children as living in areas with SEIFA score in the bottom 20%, the middle 60% or the top 20%	Not available	Uses SEIFA score of relative disadvantage, matched from 2006 Census by SLA The distribution of scores in the dataset was used to classify children as living in areas with SEIFA score in the bottom 20%, the middle 60% or the top 20%
Family characteristics			
Family income	Not available	The distribution of household income for those in scope was examined to identify those in bottom 20%, middle 60% and top 20% of the distribution, and those with missing income were identified	The distribution of household income for those in scope was examined to identify those in bottom 20%, middle 60% and top 20% of the distribution, and those with missing income were identified
Parental employment	Not available	Yes (not employed, part-time, full-time); part-time is < 35 hours per week	Yes (not employed, part-time, full-time); part-time is < 35 hours per week
Single parent	Not available	Yes	Yes

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Table E1 Variables used in multivariate analyses, child in ECE versus not in ECE

Variable	AEDI	NSPCCC	LSAC
Parental education	Not available	Primary carer education (incomplete secondary, secondary/diploma/certificate, bachelor or higher)	Primary carer education (incomplete secondary, secondary/diploma/certificate, bachelor or higher)
Child characteristics			
Indigenous child	Whether child is of Aboriginal or Torres Strait Islander origin	Indigenous status of parent respondent	Indigenous status of child
Non–English speaking background	Whether child considered English as second language	Main language spoken by parent respondent	Main language spoken by child
Special health care needs	Children with special needs: those who have chronic medical, physical or intellectual disabilities that require special assistance Teachers were asked to base their response on medical diagnosis	Not available	Child has special health care needs
Age at survey	Not applicable since ECE information collected retrospectively	In months—used as a control variable; results not discussed	In months—used as a control variable; results not discussed